DOCUMENT RESUME

ED 200 802 CE 028 686

TITLE	South Carolina Office of Vocational Education Needs Assessment Handbook.
INSTITUTION	South Carolina State Dept. of Education, Columbia. Office of Vocational Education.
PUB DATE	Apr 80
NOTE	172p.
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	Accountability; Administrator Guides; Advisory Committees; Educational Assessment; Educational Needs; *Educational Planning; Educational Research; *Evaluation Methods; Guides; *Needs Assessment; *Program Development; Program Effectiveness; *School Districts; Trend Analysis; *Vocational Education

ABSTRACT

The purpose of this handbook is to provide local administrators with some basic guidelines which will enable them to conduct a needs assessment in their areas. The handbook contains a description of the model, sample forms, procedures, and techniques that a local administrator will need in order to conduct a needs assessment. It is divided into modules, each one covering a different phase of the needs assessment process. The modules are as follows: (1) Needs Assessment Overview, (2) Designing the Study, (3) Job Market Analysis, (4) Existing Program Analysis, (5) Population Analysis, (6) Resource Analysis, (7) Program Plan Development, and (8) References. (LRA)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

131

ED200802

SOUTH CAROLINA OFFICE OF VOCATIONAL EDUCATION NEEDS ASSESSMENT HANDBOOK

Prepared by

Research Coordinating Unit
Ancillary Services Section
Office of Vocational Education
Dr. Moody Oswald, Director

Division of Instruction
Sidney B. Cooper
Deputy Superintendent

South Carolina Department of Education
Dr. Charlie G. Williams
State Superintendent

Columbia, South Carolina

CE 028 686

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

April, 1980

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

E. L. Knight

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

TABLE OF CONTENTS

PREFACE 1
NEEDS ASSESSMENT - AN OVERVIEW 3
DESIGNING THE STUDY 9
JOB MARKET ANALYSIS 23
EXISTING PROGRAM ANALYSIS 58
POPULATION ANALYSIS 92
RESOURCES ANALYSIS 103
PROGRAM PLAN DEVELOPMENT 121
USING DATA EFFECTIVELY 130
REFERENCES 157

PREFACE

PREFACE

Program planning, evaluation, implementation, decision-making, are all terms familiar to local administrators as they attempt to comply with federal legislation as well as state requirements. For the purpose of accountability at both the state and federal levels it is necessary that each of these activities be carried out as carefully and accurately as possible. Before any planning or evaluation or decision-making can take place, however, the local administrator must have current, relevant information about the needs of the students, the community and the employers served by the local vocational programs.

Needs assessment, therefore, is a basic component of planning and evaluation process. Needs assessment is, in fact, crucial if a meaningful and comprehensive program of vocational education is to be established. Involvement by local administrators in the assessment of local needs will enhance the likelihood that the results of these efforts will be implemented with both immediate and long-range impact on their vocational education programs.

The purpose of this handbook is to provide local administrators with some basic guidelines which will enable them to conduct a needs assessment in their local areas. Since it is important to select an assessment approach which is within one's capabilities to implement, an attempt has been made here to prepare a product which can be used "as is" or easily modified by most local administrators.

The handbook, which was adapted from the New Hampshire Needs Assessment Handbook for Vocational Education Planning (1973), contains a complete "how to do it package" with a description of the model, sample forms, procedures and techniques that a local administrator will need in order to conduct a needs assessment. It is divided into modules, each one covering a different phase of the process so that the local administrator can undertake the entire process or only those portions which meet the most critical needs. The modules, each a separate section of the handbook, are as follows:

*NEEDS ASSESSMENT OVERVIEW

An explanation of the planning cycle and the role needs assessment plays in the process. A description of the activities within the needs assessment component.

*DESIGNING THE STUDY

A discussion of how to set up an advisory committee, gain publicity, and design a plan of action for your study.

*JOB MARKET ANALYSIS

Forms and procedures for using national, state and local job market data in vocational program planning.

*EXISTING PROGRAM ANALYSIS

Forms and procedures for analyzing programs currently offered. Student interest and student follow-up surveys are also discussed.

*POPULATION ANALYSIS

A discussion of economic, demographic, social and educational characteristics of the community and student body and their implications for vocational education planning.

*RESOURCE ANALYSIS

Forms and procedures for analyzing available resources in terms of facilities and personnel, and a discussion of how to conduct a survey of community resources.

*PROGRAM PLAN DEVELOPMENT

A discussion of procedures and a format for pulling together all the information into a comprehensive plan for vocational programs.

*REFERENCES

A list of references which present alternative publications dealing with program needs assessment, evaluation, and planning.

6

NEEDS ASSESSMENT - AN OVERVIEW

A needs assessment is an organized attempt to identify deficiencies of all kinds so that they may be resolved or ameliorated through well-designed plans. In an educational system these deficiencies may include student underachievement, inadequate teacher preparation, insufficient equipment, teaching materials, space, etc.

The conduct of an assessment of educational needs is an important precursor to the design, implementation and completion of valid and useful educational programs. It provides base-line data for use in measuring the progress made in improving their efficiency and effectiveness. A needs assessment should not be perceived as a mechanical, one-time-only undertaking but, rather, one which will afford an opportunity for an orderly planning, management and review of the educational system in a continuous, self-correcting manner. A needs assessment is only useful, however, if the results are employed as the basis for establishing goals and priorities for program development and for planning.

Some of the questions that can be answered by needs assessments which will aid in program planning and decision-making include:

*What are the manpower requirements in those occupations for which secondary vocational programs provide training, as seen from the local, state and national levels?

*What programs are currently being offered to students? What are the characteristics of the students being served? What are the enrollments? How many completions?

*What are the population characteristics of the community being served? (such as income, education and rate of population growth)

*What are the interests of the students who might enroll in vocational programs? What are their educational aspirations?

*What feedback has been collected from a follow-up survey of former students? Did the vocational programs prepare students for the world of work? Were the vocational needs of the general student population met?

*What facilities are presently available for vocational programs? (both inside and outside the school)

*What are the present staffing patterns, and would additional staff, or staff retraining, be necessary for expanded programs?

With the needs assessment process requiring input from a variety of sources in a variety of different ways, it becomes imperative that some structure be placed upon the process. There must be a conceptual framework which illustrates all the elements of the needs assessment process and shows how they relate to each other. Also, the framework should describe how the needs assessment activities fit into the total planning cycle.

This conceptual framework or structure is called a Model. A model which labels the components, illustrates the sequence of events, and displays the interrelationships of the parts is required if we are to grasp the total picture of community needs assessment and its place in the planning cycle.

NEEDS ASSESSMENT MODEL

Before a needs assessment can be presented, it is necessary to precisely and clearly define those terms which will be used in the process. One such word is *need*. As stated before, a needs assessment is an organized attempt to identify deficiencies. A *need*, therefore, is an identified deficiency or discrepancy between the actual state ("what is") and the desired state ("what ought to be"). Mathematically this concept could be presented as:

What Should Be - What Is = Educational Need

Care should be taken not to confuse a *need* with a *want* which may be easily identified but may not necessarily be a proper goal to satisfy.

Figure 1 details the various types of analyses which take place within a Needs Assessment.

Essentially the needs assessment model requires that data be collected and analyzed in four broad areas of concern. They are:

*Job Market Analysis,

*Existing Program Analysis,

*Population Analysis, and

*Resources Analysis.

Throughout the process of collecting information within these four areas, you should look for data which describe the current status ("what is") of events as well as data which indicate "what ought to be."

The objective of collecting the "what is" and "what ought to be" information is to bring the two together in a *Discrepancy Analysis* designed to point out, or "flag" those situations where a wide gap exists between "what is" and "what ought to be".

Once discrepancies are identified, the implications of the discrepancy can be discussed and priorities set in terms of moving toward removing the discrepancy.

Since no educational system has sufficient resources to meet all its needs simultaneously, it is necessary to set priorities among the identified needs. A needs assessment must provide data that will ultimately lead to an effective allocation of available resources. In other words, the data must provide a measure of the relative criticality of each identified need. Priorities set as a result of the discrepancy analysis will be developed by considering the factors listed below:

*Degree of discrepancy or "gap"

*Cost and/or funding availability

*Personnel

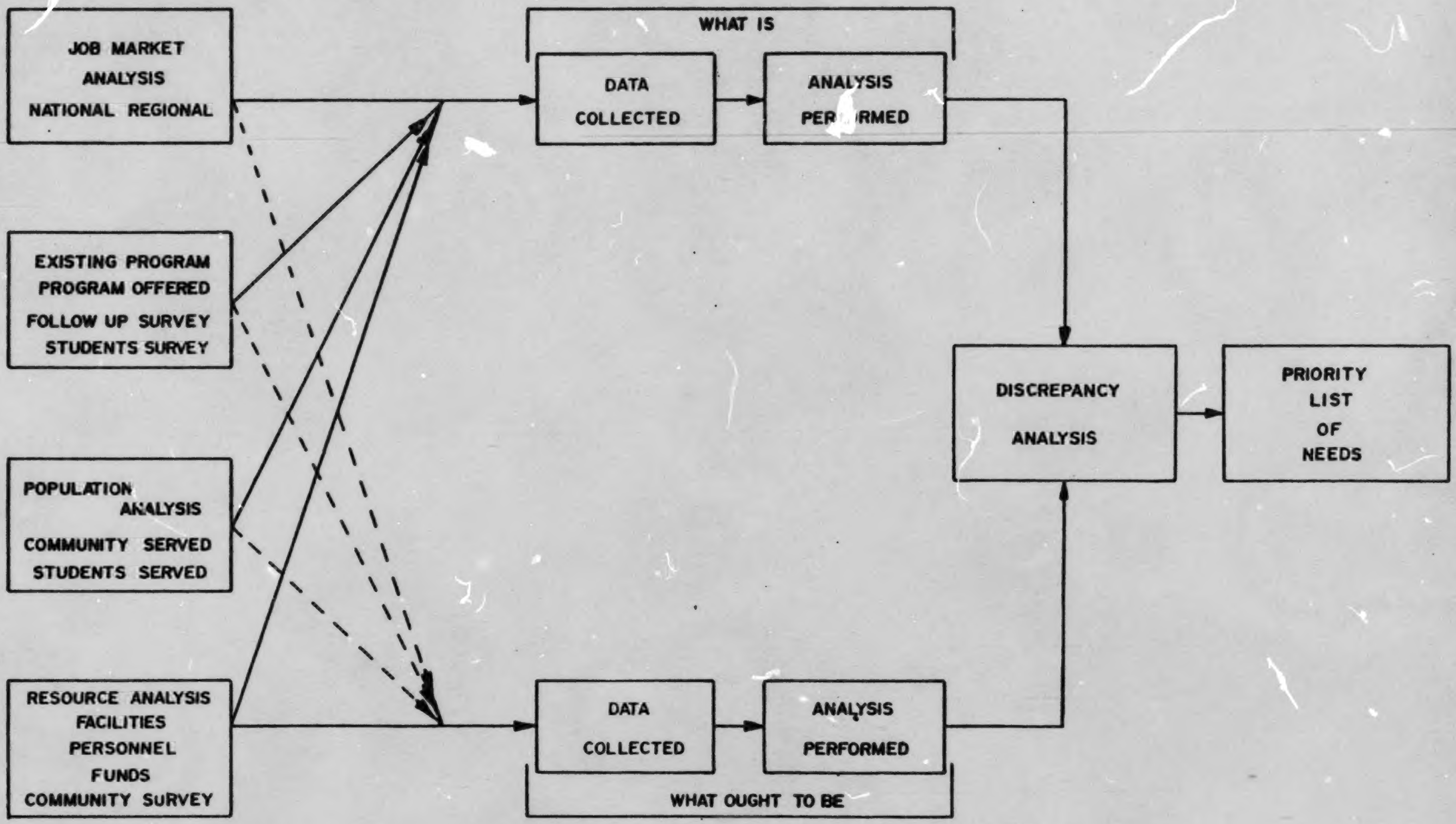
*Facilities

*Program acceptability

*Political considerations

Discrepancy analysis will be discussed in more detail after the entire needs assessment process has been presented.

NEEDS ASSESSMENT MODEL


JOB MARKET ANALYSIS NATIONAL REGIONAL
EXISTING PROGRAM PROGRAM OFFERED
FOLLOW UP SURVEY STUDENTS SURVEY
POPULATION ANALYSIS
COMMUNITY SERVED STUDENTS SERVED
RESOURCE ANALYSIS FACILITIES PERSONNEL FUNDS COMMUNITY SURVEY
WHAT IS
DATA COLLECTED
ANALYSIS PERFORMED
DATA COLLECTED
ANALYSIS PERFORMED
WHAT OUGHT TO BE
DISCREPANCY ANALYSIS
PRIORITY LIST OF NEEDS

DESIGNING THE STUDY

Whether you plan to implement the entire needs assessment process described in this manual or only selected parts, it is vital to gain community support for the effort. This is accomplished through the setting up of an advisory committee, gaining additional community interest through press releases and other forms of publicity, and working with the community to develop a plan for how and when the needs assessment study will be carried out.

THE ADVISORY COMMITTEE

Why involve the community in the educational needs assessment process? After all, aren't the teachers and principals the experts? What do we pay them for?

These are just some of the responses you are likely to get when you ask community members to get involved. Traditionally, most communitites elect several members from their towns to act as School Board members, and they pay out good money for buildings, books, teachers, and everything needed to operate the "basic" school.

Often, educators leave the taxpayer out of the picture until it's time to ask the community for more money to run the school another year. This strategy is short-sighted. Community involvement and support can build needed classroom space, can give additional financial support to the new vocational program you've been working hard to develop. It can expand the learning experiences for students by opening community doors for visitation. It can lend expertise to the classroom for an hour or a week with guest lectures. In short, if the people decide they want a better educational program, they will find a way to have it.

The advisory committee for your vocational needs assessment study should reflect the variety of school, state, business, and industrial groups who are affected by vocational education programs. The following list is offered as a check to see if you have included a variety of people from a wide variety of backgrounds.

* State department staff member
* Local superintendents
* Local vocational director
* Local labor leader
* Local industrial/business leader
* School Board member
* High school principal
* Vocational teacher
* Academics teacher
* Student
* Needs assessment consultant
* The Mayor and Council members
* Civic organizations
* Parents
* Senior citizens

Certainly every committee would not necessarily have representatives from all the above categories. Generally, it becomes inefficient when working with a committee of more than ten people.

People selected to serve on advisory committees are usually very busy and have limited time to contribute. Accordingly, schedule meetings only when needed (once per month is more than ample). Prior to each meeting, send announcements and materials you wish them to critique or review. Also include an agenda of topics which are to be considered at the meeting. Meetings which run longer than two hours are generally not well organized and business-like.

All activites connected with the needs assessment study should be listed (see Plan of Action Chart,) and progress on these activities reviewed at each meeting. Also, all public announcements (see Publicity) or questionnaires should be cleared through the advisory committee as well as the formal school district channels. Keep everyone informed.

PUBLICITY

Once you decide to conduct needs assessment activities, it us useful to inform the community (of the upcoming study) through news releases (newspaper, radio, prehaps TV). Be sure to note purpose and desired results of the study. (See sample, "Study Purposes").

Following a general release, you follow with articles which update the progress of the study and/or inform the community of specific aspects (see sample, "Manpower Survey") of the study.

The process of public information helps insure community awareness of what the vocational program is doing and the results of these efforts once they occur.

SAMPLE NEWS RELEASE

STUDY PURPOSES

Contact: George Baker — Date

Phone: 345-6789 — **FOR IMMEDIATE RELEASE**

YOURTOWN, S. C. - The ABC School District recently received a grant for the development of a community survey to determine educational needs. The project, now underway, is aimed at improving the school-community partnership and at providing high school students with an improved vocational education program.

The project will tie together all aspects of vocational education needs as determined by the survey. It will be an exercise that will result in a complete, simple usable study which can be used by the ABC district in vocational education planning. The framework developed by this project will enable our community to identify and discuss common problems. At the very least, ABC will have developed a total vocational education plan.

A major thrust of the project will be to identify (through newspaper ads, questionnaires, and personal interviews) the resources within the community which can assist the ABC Vocational Center in the development of its vocational education programs.

The project director is George Baker, vocational coordinator at ABC Vocational Center, and the current committee members are: Bob Smyth, Director; Miss Helen Johnson of the S. C. Department of Education; Paul Jones of XYZ Manufacturing Co.

SAMPLE NEWS RELEASE

Contact: George Baker

Phone: 345-6789

Date

FOR IMMEDIATE RELEASE

YOURTOWN, S. C. - ABC Vocational Center will be conducting a local manpower survey during the week of ________________. The survey is part of a program improvement effort now underway at the school. The project will tie together all aspects of vocational education needs assessment. The manpower survey is a major element of the project and will consist of a random sampling of ABC businessmen who, through direct mail questionnaires and personal interviews, will be asked their attitudes toward the school program, what the future job market demands are, and suggestions for improving the school-industry partnership. The common framework developed by this study will enable communities to identify and discuss common problems. At the very least, the manpower survey will contribute towards the development of a more comprehensive vocational education program at the school.

SAMPLE NEWSPAPER AD

WE'RE COMING TO YOU

For help in developing career education and vocational training in our schools. The ABC School District is looking for people of all ages and skills to form:

- advisory committees
- task force groups
- skill training groups
- volunteer groups
- vocational training programs

IN OPEN PARTNERSHIP
WITH THE COMMUNITY,

the ABC School System hopes to bring your skills to our school programs at all levels.

YOU HAVE THE EXPERTISE -
WE NEED YOU!

Career and vocational training are becoming the most active areas of our schools today. If you want to help with your Time, Skills, or Ideas, contact:

George Baker
Vocational Coordinator
ABC Vocational Center
Yourtown, S. C.

or call (803) 345-6789

SAMPLE NEWSPAPER AD

CAN YOU HELP?

Career and vocational training are becoming the most active areas of our schools today.

WE WANT YOU to help us develop programs for trades and skills.

IN THE ABC SCHOOL SYSTEM

we're looking for community residents of all ages and skills to form advisory committees, task force and skill-training groups, vocational training programs.

If you can help with your
TIME, SKILLS, OR SUGGESTIONS
contact:

George Baker
Vocational Coordinator,
ABC Vocational Center
Yourtown, S. C.

or call (803) 345-6789

PLAN OF ACTION

As a final activity in the design of the needs assessment study, a Plan of Action should be developed, completed and agreed to by the advisory committee. A plan is necessary because during the course of the study a number of different, yet related, tasks have to be accomplished by a number of different people. The plan of action format (see example which follows) provides the structure for:

- Listing in sequence the major activities to be accomplished for the needs assessment,
- Indicating the person responsible for the accomplishment of each task,
- Defining the resultant product or indicator of accomplishment for each task,
- Placing the accomplishment of each needs assessment activity on a time line using units of days, weeks, or months.

Once the advisory committee has been selected, the community informed of the study and a plan of action developed, you are ready to move forward into one or more of four major areas of data gathering and analysis.

The following four sections of this handbook:

- Job Market Analysis
- Existing Program Analysis
- Population Analysis
- Resource Analysis

address each of the major areas of needs assessment in detail. Attached is a blank plan of action form for your use, detailed instructions for completing it, and an example of a completed form. In addition, there is a Checklist for Survey Questionnaires which should be helpful in the development of the instruments for data collection.

PLAN OF ACTION CHART

OBJECTIVE:

Date Chart Prepared________________

Frequency of Update________________

In charge of Project__________ Status as of___________

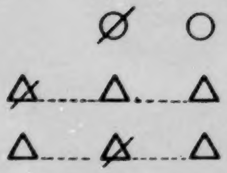
TASKS TO BE ACCOMPLISHED	INDIV.RESP.	RESULT	. . . .

OBJECTIVE: (State the overall objective of the project as clearly and specifically as possible.)

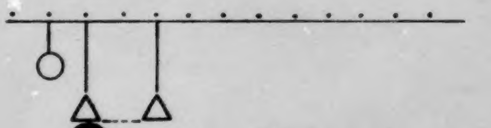
In charge of Project (who has overall responsibility)

TASKS TO BE ACCOMPLISHED	INDIV. RESP.	RESULT
List each task that needs to be accomplished, in chronological order.	List the person or persons responsible for each task. If more than one person, list first the name of the person with primary responsibility.	List the result or product for each task - ie, what will show that task has been completed. Examples: report briefing conference meeting brochure speech memo interview plan proposal

3. If there is a schedule change, cross out the circle or triangle, and draw in new one.



4. Draw a vertical line from each symbol to the appropriate hashmark at the top of the page so that dates line up.



PLAN OF ACTION CHART

Date Chart Prepared ____________

Frequency of Update (weekly or bi-weekly or monthly)

Status as of (tape over and change date each time chart is updated.

. . . .

Label the hashmarks - each mark represents 1 day or 1 week, depending on the duration of the project:

May June

26 29 30 31 1 2 5 6 7 OR 5/5 5/12 5/19 5/26 6/2 6/9 6/16 6/23

(NOTE: list only working days here)

1. Prepare the Chart - schedule each task using the appropriate symbol opposite the task and under the date or dates:

○ = a one-shot task that takes one day or part of a day - "Brief Executive Director".

△------△ = a task that takes more than 1 day - the first triangle is under the beginning day (or week) of the task, and the second triangle under the day (or week) when the task is scheduled to be completed - connect the two by a "dashed" line.

2. Update - when the task is begun, fill in the circle of the left-most triangle. When updating the chart, indicated progress (on a task of greater than one day) by connecting the dashes between the triangles to the same degree as the task has been accomplished. For example, if at update the task is 25% complete, the the line between triangles would be 25% solid and 75% dashes. If at a later update the task is 75% complete, then the line would be 75% solid and 25% dashes.

● = completed one-time task

▲------△ = task just begun

▲__----△ = task 25% completed

▲_____--△ = task 75% completed

▲_______▲ = task 100% completed

(NOTE:extend the form on the right-hand side if necessary for a project of long duration)

PLAN OF ACTION CHART

Objective:

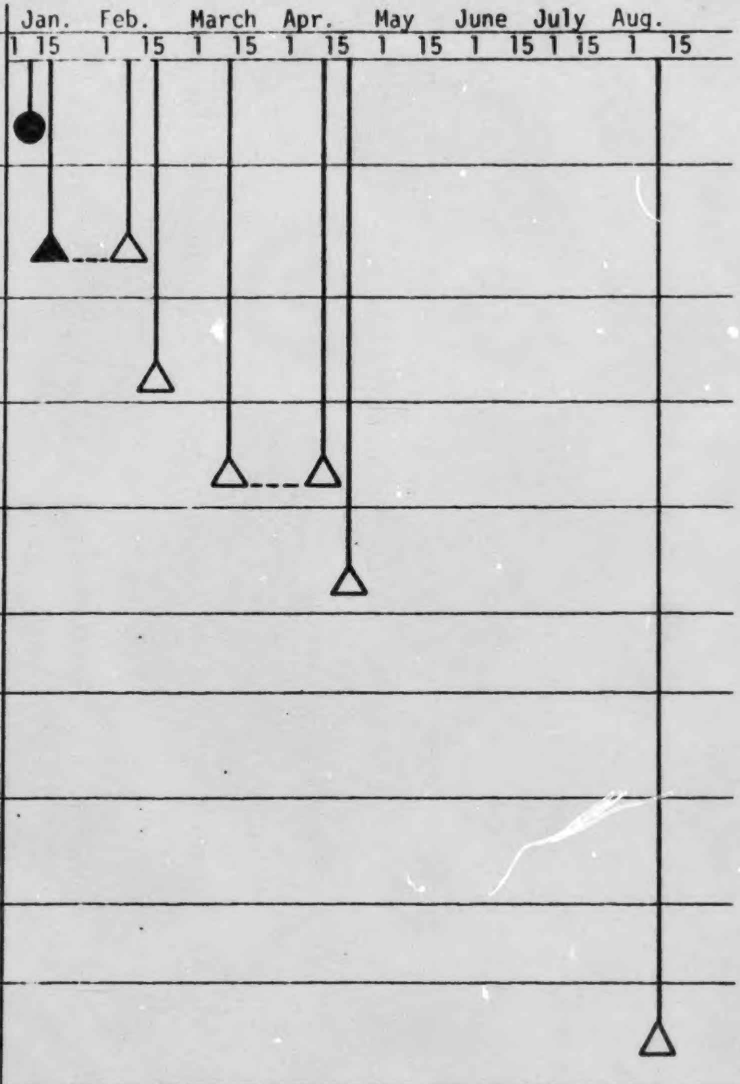
Date Prepared: December

Frequency of Update:

Project Director:

Status As Of:

Tasks to be Accomplished	Indiv. Resp.	Result
1. Select Project Committee	Local Director	Committee documented
2. Define data needs (manpower, teacher, resources, population)	Committee, local director, consultant	Plan for each data needs set
3. Procedures set for data gathering	Local Director, committee	Procedures detailed
4. Design data collection instruments	Local Director, consultant	Instruments presented to comm.
5. Pilot test questionnaires	Local Director	Change as feedback indicates
6. Conduct Surveys	Local Director & staff	Data in
7. Compile and Analyze data	Local Director, consultant	
8. Draft of needs assessment report	Local Director	Draft to committee for review
9. Complete report and program plan	Local Director	Plan Complete
10. Disseminate results to community for reaction	Local Director, committee	



CHECKLIST FOR SURVEY QUESTIONNAIRES

Several sample survey instruments will be presented throughout this handbook which could be adopted in their entirety, modified to suit the local needs, or serve as guidelines for developing new instruments. There are certain requisitions which must be met when constructing a survey instrument. The following is a checklist of questions which should be answered when developing a questionnaire:

1. What is the purpose of making the survey?
2. What group is to be surveyed?
3. Is the subject appropriate for the indicated public?
4. Are the instructions for completing the survey clear and concise?
5. Is the survey instrument as brief as possible?

   For community groups, it should not be more than two pages (one sheet) front and back.
6. Is the personal information requested only that which is actually needed?

   Can it be easily provided?
7. Are all questions composed of simple, familiar words?
8. Are all questions clear and concise?
9. Is the arrangement such that answers can be easily and readily tabulated?
10. Has the validity of the instrument been checked by pilot testing the instrument?

INTRODUCTION

JOB MARKET ANALYSIS

Job Market Analysis represents the local director's study of the supply and demand aspects of the labor market as it relates to the local area of concern. If the purpose of vocational education is to prepare people to take a meaningful place in the job market, the studies must be made of how that ever-changing job market looks now, and how it may reasonably be expected to look in the future.

Specifically, Job Market Analysis is designed to answer the question, "How many and what kinds of jobs should we be training people for?" To accomplish this the Job Market Analysis portion of the Community Needs Assessment process has been broken down into two parts:

1. The National/Southeast/South Carolina Job Market Picture - this involves collecting as much data and other information as possible from the national, regional, and state levels, and displaying the data on the forms provided so it can be looked at all together and factored into the needs assessment process. This is done both for programs currently being offered (to determine, later in the process, if they ought to be offered and, if so, at what enrollment levels) and at other areas of employment where programs are not currently being offered (to determine later in the process, whether or not new programs should be considered).
2. Local Manpower Picture - since, in spite of a relatively mobile population, most vocational graduates find work in the local area, it is vital that a study be made of the local job market as it is now and as it may be expected to be in the future. The study consists of conducting a

survey of business and industry in the area to assess the kinds of jobs they offer, their current needs for people trained in various areas, and their best estimate of future needs for trained manpower.

The procedures to be followed, the forms used, sources of data and potential problems are described in the following sub-sections.

NATIONAL/SOUTHEAST/SOUTH CAROLINA

JOB MARKET PICTURE

Purpose and Process: The purpose of this sub-section is to develop a picture of the present and future job markets as seen at the National, Southeast, and South Carolina levels. Data which has already been collected by other agencies can be compiled and displayed on the forms provided.

Possible Problems: The data available is often incomplete, sometimes inaccurate, coded and broken down in inconsistent ways and represents, at best, a calculated guess about the future based on past trends. Nevertheless, it is essential to pull together what data is available, display it in one place, temper it with other information and judgement and use it as part of the needs assessment process. While definitive numbers are difficult, it is possible to discern trends in various specific jobs or clusters. The unacceptable alternative to this procedure is, of course, to ignore the data or pass it off as useless.

Sources of Data: The documents which contain the data needed for this sub-section are listed in the National Data Sources (pg 37) and the South Carolina Data Sources (pg 39). These documents may be obtained directly from the source. Pieces of data from newspapers, professional journals, Manpower Magazine, and other sources can be added to the forms from time to time as part of a continuous needs assessment process.

Forms & Instructions: Following are four forms:

JMA-1 for the National and Southeast jobs market data on programs currently being offered at the local center.

JMA-2 for National and Southeast data on programs not currently being offered, but which might be offered in the future.

JMA-3 for South Carolina jobs market data on programs currently being offered at the local district level.

JMA-4 for South Carolina jobs market data on programs not currently being offered, but which may be offered in the future, depending on that the data shows.

31

INSTRUCTIONS

JMA-1

NATIONAL AND SOUTHEAST JOB MARKET DATA FOR CURRENT PROGRAMS.

The purpose of JMA-1 is to develop as complete a picture as possible of the National and Regional job market both now and in the future, as it relates to programs currently being offered in the local community.

Column 1 -

List each area of employment for which a program is currently preparing students; e.g., "carpentry," "auto mechanics," etc. It may be desirable to leave 2 or 3 lines for each area, as there may be data available from 2 or 3 sources.

Column 2 -

List the sources of data used for each area of employment; e.g., Manpower Report of the President, etc. As mentioned, there may be 2 or 3 or more sources of data for each area of employment with one line for each source. The sources of data are shown in National Data Sources (pg 37).

Column 3 -

List the current level of employment mentioned in each data source for each area of employment; e.g., "25,400." For a given area, such as carpentry, the current level should be about the same in each data source.

Column 4 -

List the projected annual level of demand for each employment area. This may be given in all or only some of the data sources listed for that area. The annual level of demand is the number of jobs open (through expansion and replacement) each year in that kinds of employment. This number is a projection based on past trends and might be quite different in different sources. However, all data should be listed so that at least a general trend can be noted for that area of employment. The annual level of demand should be listed, if available, for the next year and five years hence (note the years at the top of the column). If that is not available, list whatever is, and note the years at the top.

Column 5 -

This column is, perhaps, the most important. The ideal, if it is available, is to list the percentage increase in jobs available, over the five year period for that area of employment; e.g., "+50%", meaning that a 50% increase will be expected over the course of the next five years. If such specific data is not available, it should be possible at least to use the data in the preceeding columns to discern a trend of expansion or contraction in that employment areas, and the degree relative to other areas of employment. For example, it might be noted that the area is "great increase" or "moderate increase" or "slight increase" or "stable" or "slight decrease" or "great decrease", etc.

Column 6 -

Use this column to make any comments to expand on or clarify the data.

33

JMA - 1

DATA: NATIONAL AND SOUTHEAST DATA FOR CURRENT PROGRAMS

TASK: JOB MARKET ANALYSIS

DATE PREPARED:____________________ COMMUNITY:____________________

Col. 1	Col. 2	Col. 3	Col. 4		Col. 5	Col. 6
Area of Employment Demand	Source of Data	Current Level	Projected Annual Level of Demand		Percentage of Change/or Trend	Comments
			19	19		

INSTRUCTIONS

JMA-2

NATIONAL AND SOUTHEAST DATA FOR OTHER PROGRAMS

The purpose of JMA-2 is to develop a picture of the National and Southeast job markets as they compare to areas of employment where programs are not currently being offered, but where programs are being considered or may in the future.

The instructions for JMA-2 are exactly the same as for JMA-1. Data sources for JMA-2 are shown in the National Data Sources (pg. 37).

Col. 1 - List each area of employment not currently offered, but on which it is desired to collect data; e.g. conservation officiers. This list will be expanded over time as other programs are requested or considered.

JMA - 2

DATA: NATIONAL AND SOUTHEAST DATA FOR OTHER PROGRAMS

TASK: JOB MARKET ANALYSIS

DATE PREPARED:________________ COMMUNITY:________________

Col. 1	Col. 2	Col. 3	Col. 4		Col. 5	Col. 6
Area of Employment Demand	Source of Data	Current Level	Projected Annual Level of Demand		Percentage of Change/or Trend	Comments
			19	19		

INSTRUCTIONS

JMA-3

SOUTH CAROLINA DATA FOR CURRENT PROGRAMS

The purpose of JMA-3 is to develop as complete a picture as possible of the South Carolina job market, both now and in the future, as relates to programs currently being offered in the local community.

The instructions for JMA-3 are exactly the same as for JMA-1 except that South Carolina data are used for each area of employment listed on JMA-1. Data sources for JMA-3 are shown in South Carolina Data Sources (pg 37).

JMA - 3

DATA: SOUTH CAROLINA JOB MARKET

TASK: JOB MARKET ANALYSIS

DATE PREPARED:____________________ COMMUNITY:____________________

Col. 1	Col. 2	Col. 3	Col. 4		Col. 5	Col. 6
Area of Employment Demand	Source of Data	Current Level	Projected Annual Level of Demand		Percentage of Change/or Trend	Comments
			19__	19__		

INSTRUCTIONS

JMA-4

SOUTH CAROLINA JOB MARKET DATA FOR OTHER PROGRAMS

The purpose of JMA-4 is to develop a picture of the South Carolina job markets as it relates to areas of employment where programs are not currently being offered in the local community, but where programs are being considered or may be in the future.

Column 1 -

list each area of employment, not currently offered, but on which it is desired to collect data; e.g. "dental hygienist". This list will be expanded over time, as other programs are requested or considered.

Column 2-6

same as JMA-1 with data sources shown in South Carolina Data Sources (pg 39).

42

JMA - 4

DATA: SOUTH CAROLINA JOB MARKET DATA FOR OTHER PROGRAMS

TASK: JOB MARKET ANALYSIS

DATE PREPARED:____________________ COMMUNITY:____________________

Col. 1	Col. 2	Col. 3	Col. 4		Col. 5	Col. 6
Area of Employment Demand	Source of Data	Current Level	Projected Annual Level of Demand		Percentage of Change/or Trend	Comments
			19	19		

NATIONAL DATA SOURCES

PUBLICATION	TYPE OF INFORMATION
Occupational Outlook Handbook, Bureau of Labor Statistics, Department of Labor	Published every two years, the handbook explains the job outlook for many occupations.
Occupational Outlook Quarterly, Bureau of Labor Statistics, Department of Labor.	Updates the Occupational Outlook Handbook.
Tomorrow's Manpower Needs, Bureau of Labor Statistics, Department of Labor.	A 4-volume work which projects ratio of trained manpower to total employment. Data and matrix methods are provided to make state and local projections. Matrix, however, was developed on national labor pool.
Manpower Report of the President, U. S. Department of Labor.	Annual publication reporting on manpower demands, resources, utilization, and training.
Annual Report of Vocational and Technical Education, U. S. Office of Education, Department of Health, Education and Welfare.	Annual report contains data on graduates, enrollments, and expenditures in federally reimbursed programs.

PUBLICATION	TYPE OF INFORMATION
Meeting Tomorrow's Manpower Needs, Bureau of Labor Statistics, U. S. Department of Labor.	Provides national occupational employment projections and can be used by state and local planners. Techniques are illustrated to transform national data into state and local estimates.
Directory of Occupational Titles, Bureau of Labor Statistics, U. S. Department of Labor.	Provides information on employment outlook, job descriptives, sources of employment, earnings, and training needed for each occupation listed.

SOUTH CAROLINA DATA SOURCES

PUBLICATION	TYPE OF INFORMATION
South Carolina Statistical Abstract, 1978 available through Division of Research and Statistical Services, 1028 Sumter Street - Suite 201, Columbia, South Carolina 29201 ($4.00).	Extensive statistical information for the state, counties and other geographic areas. Includes population, employment, and other economic indicators.
South Carolina Employment Projections 1974-1985, Occupation and Industry. Available through South Carolina Employment Security Commission, P. O. Box 995, Columbia, South Carolina 29202.	Approximations or guides to general trends of demand for occupational employment.
Employment Projections for South Carolina's Ten Planning Districts, 1974-1985 by Occupation and Industry. Available through South Carolina Employment Security Commission, P. O. Box 995, Columbia, South Carolina 29202.	Approximations to general trends of demand for occupational employment by planning district.
Rankings of the Counties and School Districts of South Carolina, 1977-1978. Available through Office of Research, Management Information Section, State Department of Education, Columbia, South Carolina 29201.	Characteristics related to public education in South Carolina includes population, economic, pupil data.

LOCAL MANPOWER DATA

In all planning documents requested at the State level, the local manpower supply and demand situation must be addressed. The local manpower picture is very important, yet it is most difficult to obtain accurate and timely data for local areas. Although there are some sources which may be useful for the local director of vocational education to explore, a local survey conducted by the district may provide more up-to-date and reliable data. Below are detailed the procedures required and a suggested instrument to use to conduct a local manpower survey. A time line is provided which describes the sequence of events and the time required to conduct such a study.

Data from the survey and from other sources is displayed on Form JMA-5.

LOCAL SOURCES

* CHAMBER OF COMMERCE

  Often Chambers of Commerce have conducted local community surveys which address the employment and occupational patterns of the town.

* PUBLIC UTILITY SOURCES

  Often the water, sewer, power, or telephone companies have compiled extensive data on local population and manpower requirements.

INSTRUCTIONS

LOCAL MANPOWER SURVEY

A comprehensive local manpower survey requires from one to three months to complete. The time variable depends upon the readiness of your operation to conduct such a survey, the number of employers to be contacted, the mode of data gathering, and the number of staff available to complete the work.

TASKS/PROCEDURES *	TIPS OR ALTERNATIVES
1. Chart out all tasks to be completed, identify the person responsible, and describe the products resulting from each task. Finally, place these on a time line for project management.	1.1 See sample Plan of Action in STUDY DESIGN section.
2. Identify all employers (names, addresses, phone numbers) in your area of concern.	
3. Develop questionnaire to be used.	3.1 See sample instrument. Names of jobs should be changed to reflect local jobs.
4. Determine mode of contact to obtain data.	4.1 Mail * can send to many with relatively low cost * enclose self-addressed stamped envelope for return * Percentage of return is usually low (15-30%) 4.2 Phone * fastest technique, but personnel are required * difficult for person responding to move around office to obtain certain data

TASKS/PROCEDURES *	TIPS OR ALTERNATIVES
	4.3 Interview * good face-to-face public relations * costly in time and money * provides good experience for vocational teachers * most reliable data Perhaps a combination mail/interview survey would be effective. Interview your largest (top 10-20) employers but mail to others.
5. Announce via media the purpose, procedures, and timing of the local manpower survey.	5.1 See example in STUDY DESIGN.
6. Write cover letter to go with survey.	6.1 See example to follow.
7. Train interviewers, if required.	
8. Type, stuff, stamp envelopes with survey.	
9. Send survey.	
10. Follow up non-returned surveys with letters of encouragement.	10.1 * Phone call may be more personal * Have extra instruments to send to those who "did not get it" or "lost it."
11. Tabulate data.	
12. Enter results on form JMA-5.	

---

* More detailed information on surveying in general and on the various procedures followed is available as part of the instructions for a Graduate Follow-up Survey in the section on EXISTING PROGRAMS ANALYSIS. (pg 59).

YOUR TOWN AREA VOCATIONAL EDUCATION CENTER

Your Town, South Carolina

Telephone

September 10, 1979

Gentlemen:

The Your Town Area Vocational Education Center is conducting a comprehensive manpower survey of local business and industry. The purpose of the survey is to gather information and opinions from employers for use in considering new occupational programs and improving existing occupational education programs for youth and adults in the area.

We would appreciate your taking a short time from your busy schedule to complete and return this survey in the enclosed postage-paid envelope by September 17, 1979. Any suggestions or recommendations that you have pertaining to new programs or modification of existing programs will be most appreciated.

The data reported is confidential and will be used only for planning purposes. Should you have any questions about the study, please contact Mr. John Smith at the Vocational Center.

Sincerely yours,

John Smith, Director
Vocational Education

SAMPLE MANPOWER SURVEY

September 15, 1979

YOUR TOWN AREA VOCATIONAL EDUCATION CENTER

LOCAL MANPOWER SURVEY

CONFIDENTIAL: This information reported in this survey will be used for occupational education planning purposes only and the source of the information will not be divulged to any other agency or party.

INTRODUCTION: The purpose of this questionnaire is to gather information and opinions from businesses, industries, governmental and professional employers for use in considering new occupational programs or for improving existing occupational educational programs for youth and adults in the Yourtown area. Please fill in the questionnaire as completely and accurately as possible. The results will be used for occupational education planning purposes only and your organization will not be identified in any published report.

SPECIAL NOTE: Study the heading of each section of the questionnaire. If it is applicable to your organization, please complete that section; if not, proceed to the next section. When supplying employment data, please use only full-time employment figures.

PART I

GENERAL INFORMATION

1. Name of the organization ____
____
(If a division of an organization, specify division and report only for the division.)

2. Mailing address ____
(number) (street) (town)
____
(county) (zip code)

3. Name of person completing this form ____________________

4. Position or title of respondent ____________________

5. Telephone number of respondent and appropriate extension ____________________
(area code)
____
(number) (extension)

6. Total number of employees in your organization or division ________(1-4)

7. What percentage of your employees are male _____%; female _____% (7-8)

8. What percentage of your employees are from the Yourtown area? _____% (9-10)

9. Please check the space opposite the description which best identifies the activities of your business. Check more than one, if needed.

- __ Agricultural service (farm, equip. dealers, etc.) (12)
- __ Advertising (radio, newspaper, etc.) (13)
- __ Auto service (dealers, etc.) (14)
- __ Bank and finance (loan, credit, etc.) (15)
- __ Construction (contractors) (16)
- __ Education (private schools, etc.) (17)
- __ Entertainment and recreation (orchestras, etc.) (18)
- __ Food, dairy, drink (retail) (supermarkets, etc.) (19)
- __ Retail - other than food, dairy, and drink (retail merchants) (20)
- __ Health, hospital, medical, dental (physicians, etc.) (21)
- __ Professional - other than medical and dental (lawyers, etc.) (22)
- __ Durable manufacturing (hard goods) (23)
- __ Non-durable manufacturing (soft goods) (24)
- __ Government -federal, state, and local (mayors office, etc.) (25)
- __ Hotel and motel (inns) (26)
- __ Insurance (mutuals, etc.) (27)
- __ Real Estate (brokers) (28)
- __ Service (other than auto) (appliance shops, etc.) (29)
- __ Transportation (travel bureaus, railroads, trucking, etc.) (30)
- __ Utilities (water and lights, etc.) (31)
- __ Wholesaling (all products) (32)
- __ Others (write in below) (33)

____

____

PART II

JOBS THAT DO NOT REQUIRE FORMAL, IN-SCHOOL EDUCATION BEYOND HIGH SCHOOL

Please supply the information requested, relative to your establishment, for the skilled, semi-skilled and unskilled jobs listed below, for which high school level education and training (plus work experience) are considered sufficient and desirable. If formal education and training beyond high school are essential or desired, do not make entries here.

TYPE OF JOB	Number of Employees Currently on Payroll	Expected Average Annual Employment 1979-1985 (check one)			Local Supply of Qualified Employees (check one)		
		Increase	Same	Decrease	Scarce	Adequate	Surplus
1. 0 INDUSTRIAL JOBS							
1. Air Cond., Refrig. and/or heating mechanic							
2. Appliance repairman							
3. Auto mechanic							
4. Assembly line worker							
5. Aviation mechanic							
6. Boat builder							
7. Cabinet maker							
8. Gardener							
9. Chemical worker							
10. Electrician (wireman)							
11. Electrician (lineman)							
12. Electronics repairman							

(continued)

TYPE OF JOB	Number of Employees Currently on Payroll	Expected Average Annual Employment 1979-1985 (check one)			Local Supply of Qualified Employees (check one)		
		Increase	Same	Decrease	Scarce	Adequate	Surplus
13. Explosives worker							
14. Foundry worker (unskilled)							
15. Machine operator							
16. Machinist							
17. Mechanic-general							
18. Meat cutter							
19. Millwright							
20. Miner							
21. Painter							
22. Plasterer							
23. Plastics worker							
24. Plumber							
25. Printer							
26. Railway worker							
27. Roofer							
28. Sheet metal worker							
29. Stationary operator							
30. Steel worker							
31. Truck driver							
32. Welder & flame cutter							
33. Heavy Equip.operator							
34. Unskilled laborer							
Others:(describe below)							
2. 0 SALES AND SERVICE JOBS 1. Barber							
2. Bartender							
3. Beautician							
4. Bus boy							
5. Bus driver							

(continued)

TYPE OF JOB	Number of Employees Currently on Payroll	Expected Average Annual Employment 1979-1985 (check one)			Local Supply of Qualified Employees (check one)		
		Increase	Same	Decrease	Scarce	Adequate	Surplus
6. Cashier (retail store)							
7. Cook or Chef							
8. Fireman							
9. Florist							
10. Gardener-yard care							
11. Hospital attendant							
12. Janitor							
13. Laborer							
14. Laundry and dry cleaning worker							
15. Law enforcement officer							
16. Marine service worker							
17. Meter reader							
18. Nurse's aid							
19. Plant security guard							
20. Postal worker							
21. Route salesman							
22. Salesperson (retail)							
23. Seamstress							
24. Service station attendant							
25. Shoe repairman							
26. Stock boy							
27. Tailor							
28. Waiter or waitress							
29. Water treatment or sanitation worker							
Others (describe below)							
3. 0 BUSINESS OFFICE JOBS 1. Bank clerk or teller							
2. Bookkeeper							
3. Clerk typist							
4. Data processing							

(continued)

TYPE OF JOBS	Number of Employees Currently on Payroll	Expected Average Annual Employment 1979-1985 (check one)			Local Supply of Qualified Employees (check one)		
		Increase	Same	Decrease	Scarce	Adequate	Surplus
5. Dispatcher							
6. General office worker							
7. Office machine operator							
8. Stenographer							
Others (describe below)							
4. 0 MISCELLANEOUS JOBS Not requiring post-high school education (describe below)							
5. 0 AGRICULTURE JOBS 1. FARMER							
2. Nursery worker							
3.. Packer or shipper							
Others (describe below)							

PART III

Employer Opinion and Practice

A. With respect to the requirements of your organization for entry employment, in what job categories do you employ young persons who have "dropped out" without finishing high school? Please put check marks under the headings which best describe your establishment's operating policies.

ENTRY JOB CATEGORY	Frequency of Employment			
	Common Practice	Infrequently	Almost Never	
1. Highly skilled jobs				(34)
2. Business office jobs				(35)
3. Sales jobs				(36)
4. Apprenticeship for the highly-skilled trades and crafts				(37)
5. Semi-skilled jobs (assembly line and production workers, machine operators)				(38)
6. Service jobs				(39)
7. Unskilled labor				(40)

B. With respect to the requirements of your organization for entry employment, in what job categories do you employ young persons who have just graduated from high school? Please put check marks under the headings which best describe your establishment's operating policy.

ENTRY JOB CATEGORY	Frequency of Employment			
	Common Practice	Infrequently	Almost Never	
1. Technical jobs				(41)
2. Highly skilled jobs				(42)
3. Business office jobs				(43)
4. Sales jobs				(44)
5. Apprenticeship for the highly-skilled trades and crafts				(45)
6. Semi-skilled jobs (assembly line and production workers, machine operators)				(46)
7. Service jobs				(47)
8. Unskilled labor				(48)

C. To what extent do existing educational facilities in the Yourtown area meet the occupational and training needs of your company or establishment? (49)

__very well __fairly well __poorly

D. Would your organziation be interested in participating in discussions for further study of plans for improving occupational education and training at high school and post-high school levels in the Yourtown area? (50)

__yes __no __undecided

E. Is there a formal "in class" training program in your organization? (51)

__yes __no

If yes, please check the type of program you now operate: (52)

__apprenticeship
__supervisory training
__technician training
__executive development
__plant management
__job upgrading
__other (describe below)

____

____

____

F. Do you hire trained handicapped persons? (53)

__yes __no

PART IV

Job Upgrading

If schools should offer courses to help adults to upgrade job competencies and which would supplement but not necessarily duplicate existing adult education programs, which of the following do you believe might help your employees? (Check all that apply.)

AIR CONDITIONING AND REFRIGERATION
__ Theory
__ Equipment Servicing
__ Design and Installation of Systems
__ Sheet Metal Ductwork
BLUEPRINT READING
__ Various Options
DRAFTING
__ Elementary
__ Architectural
__ Tool and Die design
__ Advanced Mechanical
__ Detailing, Machine and Tool
__ Auto Body Design
__ Plant Layout
__ Machine Design
METALLURGY
__ Heat Treatment
__ Foundry Practice
__ Acetylene Welding
__ Electric Arc Welding
__ Inert Gas (Heliarc) Welding
__ Structural Steel and Concrete
__ Metalography
MECHANICS
__ Automotive Service Repair
__ Diesel Engine Repair
__ Farm Machinery Repair
MATHEMATICS
__ Basic
__ Geometry and Trigonometry
__ Applied Business
__ Technical Mathematics
__ Slide Rule
SUPERVISORY TRAINING
__ Foreman
__ Administrative
ELECTRICITY-ELECTRONICS
__ DC and AC Fundamentals
__ Transformers, Alternators, Controllers
__ Electrical Equipment Maintenance
__ Electro-magnetic Control Devices
__ Industrial Electronic Controls
__ Tubes and Transistor Circuits
__ Electronic Equipment Service
__ Thermometry and Pyrometry
__ Basic Electronics
__ Instrumentation
__ Computer Servicing
__ TV and Radio Repair
__ Design of Automated Systems
__ Communications Electronics
HYDRAULICS
__ Fundamentals
__ Pumps, Valves, Controls
__ Circuits
__ Equipment Maintenance
BUSINESS
__ Operations and Management
__ Marketing
__ Salesmanship
__ Retailing
__ Small Business Management
__ Advertising and Display
__ Real Estate
__ Mathematics of Finance
__ Introduction to Business
__ Money and Banking
__ Insurance
__ Investments
__ Economics of Business
__ Statistics
__ Data Processing and Programming
__ Key Punch Operations
__ Business Methods and Systems
__ Accounting-Bookkeeping

BUSINESS (continued)
__ Business Machines
__ Stenography
__ Typewriting

GENERAL
__ Report Writing
__ Communications (Speech, Grammar)
__ Spelling
__ Speed Reading
__ Advanced Mathematics
__ Foreign Language
__ Chemistry, Gen. and Applied
__ Technical Physics
__ Human Relations (Applied Psych.)
__ Social Sciences
__ Humanities
__ Fine Arts

OTHER
(List all other types of adult upgrading training below)

PART V

GENERAL COMMENTS

Please list any comments which you or other officials of your firm may wish to make about the improvement of education and training opportunities in the Yourtown area.

WE WOULD APPRECIATE HAVING THIS QUESTIONNAIRE RETURNED BY SEPTEMTER 17, 1979 IN THE ENVELOPE PROVIDED. THANK YOU FOR YOUR INTEREST AND COOPERATION.

INSTRUCTIONS

JMA-5

LOCAL MANPOWER SURVEY RESULTS

The purpose of the JMA-5 is to display the data obtained from the Local Manpower Survey along with data obtained from other sources.

Column 1

List each kind of job for which you have survey or other data. You may wish to leave two or three lines for each if you have a survey and other sources.

Column 2

List the source of the data; e.g., "survey" or "Chamber of Commerce".

Column 3

Give the current number of people employed in that job in the local area.

Column 4

Give the projected demand for each job. If the source is the manpower survey, give under each of the three sub-columns (increase, same, decrease) the number of employers indicating each of the three responses. If the source is other than a survey, check off the box which indicated the trend shown by that data.

Column 5

Give the current availability for each job, in the same way you showed projected demand in Column 4.

Column 6

Use this column to make any comments to expand on or clarify the data.

DATA: LOCAL MANPOWER SURVEY RESULTS

DATE PREPARED: ____________________ JMA-5

COMMUNITY: ____________________

NO. OF EMPLOYERS RESPONDING: ____________________

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4			COLUMN 5			COLUMN 6
AREA OF EMPLOYMENT DEMAND	SOURCE OF DATA	CURRENT LEVEL	PROJECTED DEMAND			CURRENT AVAILABILITY			COMMENTS
			INCREASE	SAME	DECREASE	SCARCE	ADEQUATE	SURPLUS	

PULLING THE DATA TOGETHER

If you have completed an extensive job market analysis by gathering and displaying manpower data from National, State and Local sources, the five tables of manpower data may present a problem of comprehension. In fact, some tables may be more than one page in length.

In answer to this problem, the Job Market Summary Trends table has been developed. (JMA-6)

Column 1 -

List those occupational education areas in which you currently offer programs. Also continue the list to indicate potential new programs.

Column 2 -

Using JMA-1 and JMA-2 summarize the National Job Market outlook for the program areas, current and future. Use narrative notes rather than numbers alone.

Column 3 -

Using JMA-3 and JMA-4 summarize the New Hampshire Job Market outlook for current and future areas.

Column 4 -

Using JMA-5 summarize the Local Job Market outlook and future program areas.

Column 5 -

Make any comments necessary based on comparing the National-State-Local trends in each occupational area.

JOB MARKET SUMMARY TRENDS

JMA-6

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
Area of Demand	National Outlook	South Carolina Outlook	Local Outlook	Comments

INTRODUCTION

EXISTING PROGRAMS ANALYSIS

Existing Programs Analysis represents the local director's study of the extent to which vocational programs are meeting the needs of the people of the local area - at least in terms of numbers. Data is collected on each program, the number of enrollments, how many people are completing the program, what the characteristics of the program are, how many teachers are involved. Other data is generated on the goals and aspirations of students through a student-interest survey, and on how well vocational programs have served recent graduates, by means of a Graduate Follow-up Survey.

Included in this section is a form, EPA-1, for collecting the Existing Programs Information, and complete instructions for completing the Student-Interest and Graduate Follow-up Surveys.

EXISTING PROGRAM ANALYSIS

PAST AND CURRENT PROGRAM INFORMATION

Purpose and Process: The purpose of this sub-section is to develop a picture of current program information; that is, data on the programs currently being offered, how many students in each, how many complete the program and how many teachers each program has. Data for the two previous years is also requested, so that current information might be seen as part of a trend. The trend can then be analyzed in the section of the handbook entitled, " Program Plan Development", to see if the current direction is the desired one and to see also, for example, if the trend, in terms of numbers of students completing each program, is desirable when compared with Job Market Analysis.

Possible Problems: The only problem likely to occur here is in the area of "Other Completions", i. e. the numbers of people completing that kind of program in institutions other than the local secondary vocational center. Data of this type may be difficult to come by in a comprehensive form, but what data are available (see below) ought to be listed and made part of the Completions Trends.

Sources of Data: All the data required for this section are available at the local area vocational center, with the exception of "Other Completions". These types of data may be available through local area manpower planning boards, the Employment Security Commission, the State MDTA Coordinator, Community Action agencies or personal contracts.

INSTRUCTIONS

EPA-1

PAST AND PRESENT PROGRAM INFORMATION

Column 1 - List each program currently being offered, as well as the applicable 6-digit U.S.O.E. code.

Column 2 - List the staffing (teacher equivalents) for each program for the 1977-1978, 1978-1979, and 1979-1980 school years. If completing this form in the future, cross out the years and write in the current years and previous two years (the same is true for all other columns). The current year's staffing picture is the most critical for later planning use, but the past two years data is useful for comparing teacher equivalents to enrollments to get a teacher/pupil ratio pattern.

Column 3 - List the September enrollments for each program for the current and past two years.

Column 4 - List the completions for each program for the current and past two years. The current year figures may be actual or an estimate, depending on when the form is completed. These completion figures are for the local area vocational center. Another copy or copies of this form may be completed to show the completions and trend for any subgroup such as "handicapped" or "adult". On the "groupline" name the group to which the copy of the form applies, i.e. "regular" or "adult" or "disadvantaged", etc.

Column 5 - List the completions from institutions and centers other than the local vocational center. If the data is incomplete or a rough estimate, indicate such in the "Comments" column. See "Sources of Data" in the Introduction to this sub-section for places to find these data.

Column 6 - This column asks for a statement of the completions trends for each program listed. Using the information in Columns 4 and 5, write a "+" if the number of completions is increasing significantly from year to year, a "0" if the number of completions is relatively stable and a "-" if the number of completions is decreasing significantly from year to year. The definitions of "significantly" and "stable" are the prerogative of the planner, but the following example may provide some guidelines:

	77-78	78-79	79-80	Completions Trend
Program A	10	20	35	+
Program B	10	12	14	0
Program C	20	15	8	-

The completions trend will be compared later with the employment trend shown in Job Market Analysis to see, for example, if there are any areas where the completions trend is up and the employment trend is down.

Column 7 - Use this column to make any comments to expand on or clarify the data.

DATA: PAST AND PRESENT PROGRAM INFORMATION

TASK: PROGRAM ANALYSIS

EPA-1

COMMUNITY: ______________________________

DATE PREPARED: ______________________________

GROUP: ______________________________

COLUMN 1	COLUMN 2			COLUMN 3			COLUMN 4			COLUMN 5			COLUMN 6	COLUMN 7
PROGRAM AND .S.O.E. CODE	STAFFING - TEACHER EQUIVALENTS			VOCATIONAL ENROLLMENTS			VOCATIONAL EDUCATION COMPLETIONS			OTHER COMPLETIONS			COMPLETIONS TRENDS (+ OR -)	COMMENTS
	77-78	78-79	79-80	77-78	78-79	79-80	77-78	78-79	79-80	77-78	78-79	79-80		

STUDENT SURVEY

Purpose: Involvement of in-school students in providing ideas for vocational program planning is vital. Not only must new or expanded programs be considered in light of employer needs, but so the interests of your future students be considered.

A student questionnaire which asks students to think about their future educational plans can provide useful data for your planning efforts. Questions need not focus on asking students to select potential occupations of interest, but can be asked in a way which gives vocational guidance personnel more information on how to become responsive to student needs.

Before deciding that a special student questionnaire is required to give you the needed data for your needs assessment project, check with the administration and guidance department for data which may already exist.

For example, often the guidance department has conducted interest testing (usually at the junior high level). The CAREER PLANNING PROFILE (CPP), KUDER PREFERENCE TEST, STRONG-CAMPBELL INTEREST INVENTORY or other instruments may have been used. Generally, group summary profiles and analyses are available for these tests.

74

INSTRUCTIONS FOR CONDUCTING A STUDENT SURVEY

TASKS /PROCEDURES	PROCEDURAL TIPS
1. Decide what grade levels you wish to survey. It is not necessary to survey all grades or even all students within each grade.	1.1 Surveying grades 8, 10 and 12 can give a good spread of responses.
2. What do you need to find out? Involve the guidance department, administration and academic departments to assist in selecting useful questions.	2.1 Be sure to get demographic data from students, e.g.: * grade level * sex * major area of study * ethnic background (if applicable)
3. Design the questionnaire (see sample at end of section).	3.1 See possible additional questions from Ohio Vocational Interest Survey.
4. Arrange for administering the questionnaire.	4.1 Try to gather all students to be surveyed at one time: for example during home room periods, during English classes, or large group sessions in the auditorium.
	4.2 Brief teachers and students on purpose of the questionnaire.
	4.3 Instruct teachers (1/2 hour) on specifics of the questionnaire and answer all questions.
	4.4 Give each teacher a ready-made packet with the correct number of questionnaires needed.
5. Administer questionnaire.	5.1 Be available during the administration to handle any last-minute questions or problems.
	5.2 Make every effort to THANK each teacher for his or her cooperation in the study.

6. Analyze data collected.	
7. Display data.	7.1 You may wish to use a blank copy of your survey form to display the tabulation of responses.

* More detailed information on surveying in general and on the various procedures followed is available as part of the instructions for a Graduate Follow-up Survey in this section.(pg 77).

YOURTOWN NEEDS ASSESSMENT FOR VOCATIONAL EDUCATION

STUDENT QUESTIONNAIRE

The Yourtown Area Vocational Education Center is in the process of considering current programs and making plans for what programs to offer in the future. As part of the planning porcess, we are very much interested in ways that we might better serve you. We would very much appreciate your cooperation in completing this questionnaire. Thank you

1. What grade are you in? (Circle the appropriate number)

   8 10 12 (2)

2. Sex: Male ( ) female ( ) (3)

3. If you had the opportunity, would you enroll in vocational courses as part of your high school program?

   Yes ( ) No ( ) Unsure ( ) (4)

4. Do you feel the selection of courses and programs available at ABC High School are adequate?

   Yes ( ) No ( ) Unsure ( ) (5)

   If no, what other programs or courses do you feel should be offered?

5) Parents' educational background: check one of the following for each parent:

Mother(6)	Father(7)	
☐	☐	(1) Not a high school graduate
☐	☐	(2) Graduated from high school
☐	☐	(3) Business school or trade school
☐	☐	(4) Some college
☐	☐	(5) Graduated college
☐	☐	(6) Do not know how much education

6) What do you plan to do on a full-time basis during the first year after you finish high school?

☐ (1) Work on a full-time job (8)
☐ (2) Get married
☐ (3) Enter military service
☐ (4) Work at home for parents
☐ (5) Attend college or university
☐ (6) Enroll in some type of educational training such as business, trade school, technical school, nurse training, etc.
☐ (7) Other (please specify)

____

7) How do you think your parents feel about whether you attend college after high school?

☐ (1) Insist or expect me to go (9)
☐ (2) Want me to go if I want to
☐ (3) They do not care one way or the other
☐ (4) Do not want me to go

8) What is the highest level of schooling you are now planning to complete?

- ☐ (1) Graduate or professional school (medical, law school) (10)
- ☐ (2) A four year college or university
- ☐ (3) Two years of college
- ☐ (4) A technical trade, business or beautician school
- ☐ (5) High school, then to job of my choice
- ☐ (6) Junior high school

9) Do you or have you participated in any type of work experience during the summer or after school hours?

- ☐ (1) No (11)
- ☐ (2) Yes, after school only
- ☐ (3) Yes, weekends only
- ☐ (4) Yes, after school and weekends
- ☐ (5) Yes, during summer only
- ☐ (6) Yes, during summer and during the school year

If yes, what type of work do you do?

10) After you finish high school, do you

- ☐ (1) Prefer to remain in the local area (12)
- ☐ (2) Want to move to another place in South Carolina
- ☐ (3) Want to leave the state
- ☐ (4) Don't know

11) How much help have your parents given you in planning your future career?

- ☐ (1) A great deal
- ☐ (2) Some (1[illegible])
- ☐ (3) Very little
- ☐ (4) None

12) Do you feel the need for more vocational information or counseling to help you make better vocational plans?

☐ (1) Vocational information only (14)
☐ (2) Vocational information and counseling
☐ (3) Some other type of assistance
☐ (4) I do not need any assistance at present

13) Do you think taking occupational or vocational courses would prevent you from going on to more training after high school graduation?
yes ☐ no ☐ (15)

14) How much help has your counselor given you in planning your future career?

☐ (1) A great deal (16)
☐ (2) Some
☐ (3) Very little
☐ (4) None

Below are listed a number of occupations. Please read the entire list before making your choices. Once you have read through the list, check the FIVE occupations that most nearly represent those which you would like to do when you complete your schooling.

Indicate your first choice by a 1, your second choice by a 2, your third choice by a 3, etc.

If you have any questions, ask the teacher for help.

OCCUPATIONAL AREAS CHOICE

Agriculture, Forestry, Fisheries, Conservation (17-28)

Farmer - General, Livestock, or Crops ___ (17)
Government Worker, County Agent, University Researcher, Etc. ___ (18)
Agricultural Supplies or Services Manager ___ (19)
Agricultural Supplies or Services Store Clerk ___ (20)
Agricultural Processing, Inspection, Marketing ___ (21)
Ornamental Horticulturist, Florist, Landscaper, Gardener ___ (22)
Forestry Occupations: Pulpwood, Lumbering, other Forestry ___ (23)
Commercial Fisherman ___ (24)
Conservation and Outdoor Recreation Worker ___ (25)
Veterinarian ___ (26)
Veterinary Assistant ___ (27)
Other: (specify) ________________________ ___ (28)

Construction Occupations (29-38)

Carpenter ___ (29)
Steel Construction and Erection ___ (30)
Masonry: Concrete, Brick, Tile, Stonemason ___ (31)
Electrician ___ (32)
Plumber or Pipe-fitter ___ (33)
Painter, Decorator ___ (34)
Heavy Equipment Operator ___ (35)
Contractor ___ (36)
Unskilled Laborer ___ (37)
Other: (Specify) ________________________ ___ (38)

Mechanics, Repairmen and Technical Personnel (39-51)

Aircraft Mechanic ___ (39)

Auto or Truck Mechanic ___ (40)

Diesel Mechanic ___ (41)

Farm Machinery Mechanic ___ (42)

Household Appliance Repairman ___ (43)

Engineer ___ (44)

Other Engineering Technician ___ (45)

Electronics Technician ___ (46)

Industrial Electrician ___ (47)

Machine Shop Worker ___ (48)

Pattern Maker or Tool and Die Maker ___ (49)

Welder ___ (50)

Other: (Specify)________________________________ ___ (51)

Graphics and Communications Occupations (52-59)

Printing Press Operator ___ (52)

Commercial Artist, Layout Man ___ (53)

Commercial Photographer ___ (54)

Engraver ___ (55)

Radio or TV Station Broadcaster ___ (56)

Radio or TV Station Engineer ___ (57)

Draftsman, Designer ___ (58)

Other: (Specify)________________________________ ___ (59)

Business and Office Occupations	(60-71)
Secretary, Stenographer	___ (60)
Typist	___ (61)
Accountant	___ (62)
Bookkeeper	___ (63)
Bank Clerk, Cashier, or Teller	___ (64)
Shipping and Receiving Clerk	___ (65)
Data Processing: Computer Programmer	___ (66)
Data Processing: Machine Operator	___ (67)
Telephone Operator	___ (68)
General Office Clerk	___ (69)
Owner/Manager of a retail establishment	___ (70)
Other: (Specify) ______________________	___ (71)

OCCUPATIONAL AREAS		CHOICE
Sales Occupations	(2-7)	
Salesperson in Retail Store: Grocery, Furniture, Department Store, etc.		___ (2)
Salesperson, Wholesale: Manufacturer's Representative		___ (3)
Automotive and Accessories		___ (4)
Advertising (other than commercial artist)		___ (5)
Insurance or Real Estate Salesman		___ (6)
Other: (Specify) ______________________		___ (7)
Health Occupations	(8-17)	
Medical Doctor and Dentist, Including Specialists		___ (8)
Professional Nurse		___ (9)
Practical Nurse		___ (10)
Medical Aide, Including Laboratory Assistant		___ (11)
Dental Aide, Including Hygienist and Assistant		___ (12)
Medical Technologist		___ (13)
Physical Therapist		___ (14)
Hospital or Ambulance Attendant		___ (15)
Sanitarian: Public Health Service, Inspector, Etc.		___ (16)
Other: (Specify) ______________________		___ (17)

Service Occupations (Other Than Farm) (18-34)

Driver, Deliveryman, Route Man ___ (18)
Barber ___ (19)
Cosmetologist ___ (20)
Janitor, Maintenance Man ___ (21)
Health and Home Management Aide ___ (22)
Lawyer ___ (23)
Policeman, Fireman, Patrolman, Other Protection Work ___ (24)
Private Household Worker ___ (25)
Commercial Cook, Baker, or Butcher ___ (26)
Waiter or Waitress ___ (27)
Laundry and Drycleaning Operator ___ (28)
Military Service (Full Career) ___ (29)
Social Worker ___ (30)
Service Station Worker ___ (31)
Teacher/ Teacher Aide ___ (32)
Child Care Services - Day Care Services ___ (33)
Other: (Specify)______________________ ___ (34)

Transportation Occupations (35-42)

Airplane Pilot, Navigator, Flight Engineer, Etc. ___ (35)
Airline Terminal Worker ___ (36)
Stewardess ___ (37)
Taxi or Bus Driver ___ (38)
Freight Truck Driver ___ (39)
Baggage and Freight Handler, Dispatcher ___ (40)

Transportation Occupations (continued) (35-42)

Railroad Trainman: Engineer, Brakeman, Porter, Conductor, Etc. ___ (41)

Other: (Specify) ______________________ ___ (42)

Manufacturing Operatives (43-51)

Textile Machinery Operator: Knitter, Weaver, Etc. ___ (43)

Commercial Tailor, Sewer or Dressmaker ___ (44)

Furniture Machinery Operator ___ (45)

Tobacco Machinery Operator ___ (46)

Food Processing Machinery Operator ___ (47)

Appliance Manufacturer Worker: Assembler, Tester, Solderer ___ (48)

Unskilled Laborer ___ (49)

Other: (Specify) ______________________ ___ (50)

Homemaker (51) ___ (51)

Fine Arts, Liberal Arts, and Entertainment (52-55)

Professional Athlete ___ (52)

Professional Musician or Artist ___ (53)

Architect ___ (54)

Other. (Specify) ______________________ ___ (55)

Occupations Not Listed (56-57)

Specify ______________________ ___ (56)

Specify ______________________ ___ (57)

FOLLOW-UP SURVEY OF GRADUATES

The purpose of this section is to collect as much data as possible from graduates of the various programs offered by the local vocational program. One of the best sources of information on the effectiveness of vocational programs in preparing students for the world of work is the students themselves. This is true both in terms of objective data -- for example, the percentage of students presently working in areas for which they received training -- and also in terms of subjective data such as how important the students felt their training was in helping them get a good job.

This section sets forth information on how to conduct two types of follow-up surveys; telephone and mail. The telephone survey is best for a relatively limited number of students and a limited number of questions, the mail survey allows more questions to be asked and more students to be surveyed in a given amount of time. The method used should be determined by time available, the objectives of the survey, and funds available. It is important that you follow-up students who have dropped-out of school as well. Data from students who did not graduate can provide additional insights to existing and needed programs.

Below are general instructions on how to conduct a follow-up survey and specific instructions for a telephone or mail survey.

GENERAL INSTRUCTIONS ON SURVEYS

The instructions included here are designed to cover an adequate, easy-to-administer student follow-up survey. More in-depth sophisticated surveys are possible if time and resources permit. If a more elaborate survey than presented here is desired, then books and consultants are available on the subject, and advice and assistance can be obtained from the Research Coordinating Unit in the Office of Vocational Education.

In conducting a follow-up survey, whether by telephone or mail, certain general steps should be followed.

STEP 1: Outline Survey Objectives

Outline the objectives of the follow-up survey. Decide what kinds of information are required and what the information will be used for. If in doubt about the need for a particular bit of information, leave it out. There is a tendency for surveys to become quite long, with information requested that will really never be used. The objectives used in constructing the sample telephone and mail surveys are listed in the specific instructions.

STEP 2: Identify Groups to be Surveyed

Decide who is to be surveyed; that is, what general group or groups. The surveys included here assume that a general follow-up of vocational education graduates is desired, but surveys can also be conducted of sub-groups such as disadvantaged, handicapped, or other special groups.

Once the general group has been identified, then it must be decided what parts of the general group will be surveyed. For example, it may not be practical to survey all graduates from the local vocational center since "day one". Some sub-groups should be chosen, such as "graduates from 1, 2, and 5 years ago." The farther back one goes, the more difficult it is to locate graduates. In addition, going back too far will probably not provide too much information about current programs and their effects on students. Again, do not forget to include drop-outs.

It must also be determined as to how many students of each sub-group to survey. This, of course, will also depend upon the method to be used. If the sub-groups are "graduates from 1, 2 and 5 years ago," it might be decided to survey all of them if that represents, say, 400 students. If there are a vast number of graduates or if time does not permit polling every one of them, then a random sample may be used. A random sample means that every student has an equal chance of being included in the sample. For example, using a lottery to pick 200 students to be surveyed out of a total group of 1000 would be an acceptable sample; picking only females would not.

STEP 3: Decide Survey Method

Next, determine the survey method to be used: mail or telephone. Each method has its advantages and disadvantages. It is generally easier to ask for more information in a mail survey than a telephone survey. A mail survey generally takes longer (because of necessity for reminder notes) but permits contacting more people (because a letter can be mailed out to 400 people in not much more time than to 200 people). A telephone survey can lead to better follow-up (because the caller can track down changed telephone numbers or ask the family where son Joe has moved to) but takes a lot of staff time (to make all the calls). Costs between the two methods are hard to compare because of the variables: How many follow-up letters are needed in a mail survey? How many toll calls in a telephone survey?

STEP 4: Construct Questionnaire

Construct the survey questionnaire and related documents. These are described as part of the instructions attached for each survey type. Each sample format was kept brief and designed to get the most commonly desired information, but each set of instructions includes other questions that could be included on the survey instrument, if the information is needed and it is thought that the graduates will not mind responding.

Both samples have been designed to have very few open-ended questions (essay-type answers) so that the aggregation of data can be keypunched and computerized. The instructions for computerization are not included here because the types of systems to which local centers may have access vary widely.

STEP 5: Pilot Test Questionnaire

Pilot test the survey questionnaire perhaps using currently enrolled students, to make sure it is clear and simple to understand, and yields the desired information.

STEP 6: Conduct the Survey -- See Instructions (pg 85).

STEP 7: Analyze Results

Summarize and interpret the data. As mentioned, the tabulation process can be easily computerized. If this is not practical because of the small number surveyed or lack of access to a computer, the data can easily be tabulated by hand, perhaps using students to assist. Using a clean copy of the survey questionnaire can help in tabulating returns, and can also be useful in displaying the data -- showing on the copy how many students answered "yes" and how many "no" to a question, or how many chose each response to a multiple-choice question. The response to any open-ended questions can be collected and typed on attachment sheets. The data might also be displayed as bar charts, graphs, or tables.

How the data are interpreted depends on the objectives of the survey, but a report should be written which summarizes the data, discusses the conclusions, and presents recommendations for future action. This report becomes the plan for vocational program development. (See the "Program Plan Development" section of this handbook).

INSTRUCTIONS FOR CONDUCTING TELEPHONE SURVEY

Once the objectives of the survey have been outlined, the sample selected, a decision made to conduct a telephone survey, and the names and latest addresses and telephone numbers of graduates listed, follow the instructions below.

Attached is a copy of a sample telephone survey form. This form was designed to elicit the following information:

- name, phone number, address (which can be completed ahead of time)
- high school program of study
- present employment status
- reason, if unemployed
- whether job is related to training
- whether training helped in getting the job
- general comments on the vocational program.

In addition, some of the following may be added to the survey instrument if desired (realizing that some graduates may balk at such things as current salary). Add questions only if the information is needed and will be used.

- job title.
- place of employment, kind of employer
- age
- salary (may be asked in ranges, multiple-choice)
- whether graduate is continuing studies; if so, what kind.

STEP 1

Call each name on the list. If the graduate is available, proceed with the steps below, and indicate on the list that the graduate was reached. If the graduate lives at that number but is not at home, determine a good time to call back. Indicate the call-back time and date on the list. If the graduate is no longer there, try to find out from the family how to reach him or her, or perhaps the telephone company has a forwarding number. If there is absolutely no way to get in touch with the graduate, indicate this on the list. By the end of the survey, every name should have "contacted" or "cannot be located" next to it. A third alternative, but a very unlikely one, is that the graduate declines to participate. This also should be indicated on the list.

STEP 2

The caller should introduce himself or herself, tell where he or she is calling from, describe the survey and the reasons for it and ask for the graduate's help. Attached, is a sample introduction which may serve as a guideline. Assure the graduate that his or her answers are strictly confidential and that no one's name will be associated with any answer.

STEP 3

Once the graduate has agreed to participate, the caller may proceed to the questions, using a separate survey sheet for each graduate. The caller should ask the questions slowly and distinctly, and should give no reaction whatever to any answer. It is permissible to ask for clarification of an answer to an open-ended question, but this should be done in a neutral way, not indicating approval or disapproval of the answer.

STEP 4

Confirm the current address and telephone number, thank the graduate for his or her time, and ring off.

STEP 5

Summarize and analyze the data as described in the Procedures section. (pg 84).

SAMPLE INTRODUCTION TO TELEPHONE SURVEY CONVERSATION

Below is a sample introduction to the call made as part of the telephone survey. This will serve as an example, but should not be read to the graduate. Rather, the caller should get this information across in a natural and comfortable style.

> "Good evening, Mr. Jones. My name is Bill Brown and I am calling from ABC High School. I am calling because we are trying to find ways in which we can make our vocational programs even better for our students. One of the best ways to do this is to contact graduates like yourself to find out how good a job you think we did in preparing you for the world of work. So we are calling you and your fellow graduates of the Class of 1979."
>
> We would be grateful if you would help us by answering a few questions. I assure you that all replies will be strictly confidential, and no one will be told who answered what to each question. May I please take just a few minutes of your time to answer the questions now?"

SAMPLE QUESTIONNAIRE

ABC HIGH SCHOOL TELEPHONE SURVEY OF GRADUATES

Name____________________ Phone____________________

Address____________________ Year Graduated____________ (1-2)

____________________ ☐ Male ☐ Female (3)

1. From what program did you graduate?

☐ college oriented ☐ general studies ☐ vocational (4)

☐ other__________

2. If vocational, what program of study? (5-6)

☐ Distributive Education
☐ Food Service
☐ Business Education
☐ Accounting/Computing
☐ Secretarial
☐ Typing/Clerical
☐ Building/Construction
☐ Drafting
☐ Electronics/Electricity
☐ Machine Shop

3. Are you presently employed? (7-8)

☐ yes ☐ no ☐ part-time ☐ full-time

4. If employed, is your employment in the area for which you were trained? (9)

☐ yes ☐ no ☐ partially

5. If employed, did your training help you get the job? (10)

☐ yes ☐ no ☐ partially

6. If not employed, what is the reason? (11)

☐ in military service
continuing school full time
☐ 4 year college
☐ vocational school
☐ unable to find a job
☐ ill health
☐ household/family responsibilities
☐ travel or other self-directed activities
☐ other____________________
____

7. General comments on the vocational programs or other related matters:____________________ (12)

INSTRUCTIONS FOR CONDUCTING MAIL SURVEY

Once the objectives of the survey have been outlined, the sample selected, a decision made to conduct a mail survey, and latest names and addresses of graduates to be surveyed listed, follow the instructions set forth below.

Attached is a copy of a sample mail survey. This sample was designed to elicit the following information:

* name, address, phone number
* present employment characteristics
* reason, if unemployed
* whether job is related to training; if not, why not
* whether training helped in getting a job
* whether continuing studies -- what kind
* pay scale and job title

In addition, some of the following may be added to the survey instrument if desired (realizing that some graduates may balk at such things as current salary). Add questions only if the information is needed and will be used.

* place of employment, kind of employer
* age
* salary (may be asked in ranges, multiple-choice)
* marital status
* promotions received

STEP 1

It is probably a good idea, if time and resources permit, to let each graduate to be surveyed know that the survey is on the way. This may be done by telephone or postcard. This serves to generate some interest and has the graduate watching for the survey and less likely to discard it as "junk mail."

STEP 2

Mail the survey and cover letter to each graduate. A sample cover letter is attached. The cover letter also should preferably be on official letterhead and signed by someone the graduates are likely to know. It should also give the reasons for the survey, ask for the graduate's help, and assure confidentiality of answers. Also mention the date, no more than a week after receipt of the letter, by which the form should be returned. It is also a good idea to enclose a stamped (or "no postage necessary") self-addressed envelope.

STEP 3

As replies are received, check off the names of those who have responded. After about 7-10 days, send a reminder card to those who have not replied. (See attached sample.) A second cover letter may be sent a week or two after the postcard, including another envelope and survey instrument. A sample letter is attached. This postcard/letter procedure may be done once more and/or follow-up telephone calls made.

STEP 4

Summarize and anlyze the data as shown in the Procedures section. (pg 80).

SAMPLE COVER LETTER FOR MAIL SURVEY

(OFFICIAL LETTERHEAD)

Date

Dear Graduate:

ABC High School is constantly seeking ways to strengthen its vocational programs. One very good way to do this is to find out how the graduates of the vocational programs feel about their training and how successful the training was in helping them get jobs in the kind of work for which they prepared.

This is why we are writing to you and your fellow graduates of the Class of 1979. We are asking for your help in making the vocational programs at ABC even better. Won't you take a few minutes to complete the enclosed form and return it in the envelope provided? We hope to have all forms returned by February 12.

Please be assured that all replies will be held strictly confidential, and no information will show where it came from, other than to say "from the class of '79." We are grateful to you for your help and look forward to hearing from you at your earliest convenience. If you have any questions, call Mr. Smith at the high school, 345-6789.

Sincerely yours,

ABC HIGH SCHOOL

George Baker, Coordinator
Vocational Education

OCCUPATIONAL FOLLOW-UP

Do Not Write In This Space

I. ABOUT YOU:

Present Age – [ ] Years

Sex – ☐ Female ☐ Male

Marital Status – ☐ Married ☐ Unmarried

II. ABOUT YOUR HIGH SCHOOL EDUCATION:

Year you left High School 19____

Status: ☐ Graduated ☐ Left before Graduation ☐ Earned diploma after leaving

Type of High School program –
- ☐ College Preparatory
- ☐ General Studies
- ☐ Vocational Studies

Area of Vocational Study –
- ☐ Agriculture
- ☐ Business/Office
- ☐ Distributive Education
- ☐ Health
- ☐ Industrial Arts
- ☐ Occupational Home Economics
- ☐ Trades & Industry
- ☐ None
- ☐ Other________ Specify

Did you have a job while in High School – ☐ No ☐ Yes

Were you in a Co-op Program – ☐ No ☐ Yes

III. AFTER HIGH SCHOOL:

Did you attend school after High School – ☐ No ☐ Yes

Type of schooling –
- ☐ Full time College
- ☐ Part time College
- ☐ On the job training
- ☐ Military School
- ☐ Adult or apprentice
- ☐ Home Study courses

Did you complete this schooling ☐ Yes

IV. ABOUT YOUR *FIRST FULL TIME* JOB:

How long after High School did you start –
- ☐ Immediately
- ☐ 1–3 Months
- ☐ 4–6 Months
- ☐ 7–9 Months
- ☐ 10–12 Months
- ☐ 1–2 Years
- ☐ Still not working
- ☐ Married and never employed
- ☐ Other________ Specify

How did you find the job –
- ☐ Stayed on job I had in school
- ☐ High School teacher or guidance office
- ☐ School Co-op or Placement Office
- ☐ Employment Office
- ☐ Started my own business
- ☐ Thru friends
- ☐ Thru parents
- ☐ Newspaper ads
- ☐ On my own
- ☐ Other________ Specify

In relation to WHERE YOU LIVED WHILE IN HIGH SCHOOL this job –

was located –
- ☐ In same town
- ☐ Out of town in state
- ☐ Out of state
- ☐ Out of country

required a relocation of –
- ☐ None
- ☐ 1–50 miles
- ☐ 51–100 miles
- ☐ 101–200 miles
- ☐ Over 200 miles

Relation of the job to your High School Education –
- ☐ Closely related
- ☐ Fairly related
- ☐ Slightly related
- ☐ Not related

How well did High School prepare you for your first job –
- ☐ Excellent preparation
- ☐ Good preparation
- ☐ Fair preparation
- ☐ Poor preparation

Job satisfaction –
- ☐ Very satisfying
- ☐ Satisfying
- ☐ Not satisfying

Pay Scale –
- ☐ Under $50/week
- ☐ $51–100/week
- ☐ $101–150/week
- ☐ Over $150/week

Reason for leaving first job –
- ☐ Still on the job
- ☐ Laid off
- ☐ Promoted
- ☐ More money
- ☐ More challenge
- ☐ Entered military
- ☐ Entered school
- ☐ Marriage or pregnancy
- ☐ Other________ Specify

Continued on other side

V. ABOUT YOUR PRESENT FULL TIME JOB:

What is your current status –

☐ Employed	☐ Unemployed Looking	☐ Unemployed Not looking	☐ Self Employed	☐ Other________ Specify

In relation to WHERE YOU LIVED WHILE IN HIGH SCHOOL this job –

is located –

☐ In same town ☐ Out of state

☐ Out of town in state ☐ Out of country

required a relocation of –

☐ None ☐ 51–100 miles ☐ Over 200 miles

☐ 1–50 miles ☐ 101–200 miles

Relation of the job to your High School education –

☐ Closely related ☐ Slightly related

☐ Fairly related ☐ Not related

How well did High School prepare you for this job –

☐ Excellent preparation ☐ Fair preparation

☐ Good preparation ☐ Poor preparation

Job satisfaction –

☐ Very satisfying

☐ Satisfying

☐ Not satisfying

Pay Scale

☐ Under $50/week

☐ $51–100/week

☐ $101–150/week

☐ Over $150/week

Do you think you will leave this job within 1 year from now –

☐ No ☐ Yes ☐ Undecided

VI. FULL TIME EMPLOYMENT HISTORY:

How many full time jobs have you had since High School – [ ]

How many of these jobs were related to your High School education – [ ]

List all full time jobs since High School –

(If you have had more than six (6) jobs, list the first three and the last three)

– List First Job First and Proceed to the Current or Last Job –

Approximate Number of Months on Job	Job Title

Thank You for Your Time and Cooperation in this Survey

99

SAMPLE REMINDER POSTCARD FOR MAIL SURVEY

FROM: ABC HIGH SCHOOL DATE

Dear Graduate:

About a week ago we sent you a questionnaire on your views on the vocational education you received at ABC High School. If you have already replied, thank you for your cooperation.

If you have not yet completed and returned the form, we urge you to do so at your earliest convenience. The information you provide is essential in telling us how to make ABC's vocational programs even better for the students of the future.

Thanks again for your help.

Sincerely,

George Baker, Coordinator
Vocational Education

SAMPLE SECOND FOLLOW-UP LETTER FOR MAIL SURVEY

(OFFICIAL LETTERHEAD)

Date

Dear Graduate:

Recently we sent you a vocational education questionnaire asking you to complete it and return it to ABC HIgh School by February 12.

It is vital that we receive your form so that our information on how the Class of '79 feels about their vocational training be complete. Perhaps you have misplaced the original questionnaire; if so, enclosed is another copy along with a stamped, self-addressed envelope.

Won't you complete the form and return it to ABC High as soon as possible? Thank you.

Sincerely,

ABC HIGH SCHOOL

George Baker, Coordinator
Vocational Education

INTRODUCTION

POPULATION ANALYSIS

Population Analysis represents the local director's study of the characteristics of the people who live in the local area of concern. This is done from the viewpoint of the population as a whole and student population in particular. Studying general population characteristics (such things as income and level of education) gives a partial picture of the climate in which vocational education exists in the area. If, for example, the general level of education in the area is relatively low then "selling" education as a whole may be generally tougher, but "selling" vocational education may by relatively easier. Studying the characteristics of the student population (such things as numbers of graduates going on to work versus number going on to more school) can supplement the general information generated in "EXISTING PROGRAMS ANALYSIS". It will give a more detailed picture of how effectively vocational education has been meeting the needs of students and where changes may need to be made in the future.

This section includes a form, PA-1, to collect information on the general population, and two other forms, PA-2 and PA-3, to collect information on the school-age population.

GENERAL POPULATION ANALYSIS

The attached form (PA-1, with instructions) displays a variety of data on the general population. Trends in population changes for the general population and various sub-groups are also noted. The best sources of information for completion of PA-1 are census documents and other publications listed in South Carolina Data sources, (pg. 39) of the "JOB MARKET ANALYSIS" section. Other sources are school accreditation documents, chamber of commerce literature and the annual town reports.

INSTRUCTIONS FOR COMPLETING

PA-1

GENERAL POPULATION ANALYSIS

Column 1 -

List the appropriate characteristics in your local area. Examples are:

total population of the area
town(s) population
various age breakdowns - 14-19; 20-44; 45 and over
male - female
any minority groups
disadvantaged - below "poverty level"
handicapped
housing characteristics
levels of education - 8 years, 8-12 years, 12 years
bilingual population

The 1970 Census Documents provide a number of other population characteristics which may be of interest.

Column 2 -

Give, for each group listed in the first column, the number currently in that group (1970 census unless more recent data are available). Also give the percentage which that group represents of the total population (e.g., opposite "male" might be "49.3%" and opposite "female" might be "50.7%").

Column 3 -

Give the same type of number and percentage information as in column 2, but for the 1960 census.

103

Column 4 -

Give a statement of the trend of change in that population group over the ten-year period. It might be "increase" or "stable" or "decrease".

Column 5 -

Use this column to make any comments to expand on or clarify the data.

GENERAL POPULATION ANALYSIS

COMMUNITY:

DATE PREPARED:

Column 1	Column 2		Column 3		Column 4	Column 5
POPULATION CHARACTERISTICS	CURRENT		10 YEARS AGO		TRENDS	COMMENTS
	NUMBER	PERCENT	NUMBER	PERCENT		

STUDENT POPULATION ANALYSIS

The attached form (PA-2, with instructions) collects a variety of data on the school-age population. For the current student body, data is collected on the number of students in each grade level, K-12; how many students may be expected to be in that group when it reaches grade 9 for certain grades; how many expect to enroll in college preparatory, vocational and general programs; what levels of education do students expect to attain. The latter two categories apply only to those grades for which student-interest survey data (see "EXISTING PROGRAMS ANALYSIS") or other data is available.

For recent graduates, the attached form (PA-3, with instructions) collects data from a follow-up survey of graduates (see "EXISTING PROGRAMS ANALYSIS" or other sources to profile recent graduating classes in terms of what percentage of people have gone to work, have gone into the military, etc.).

INSTRUCTIONS FOR COMPLETING

PA-2

ANALYSIS OF CURRENT STUDENT BODY

Column 1 -

Already listed on the form are all grade levels.

Column 2 -

Give the number of students currently enrolled in each grade in all schools in your area of concern.

Column 3 -

Give the approximate number of students who would be expected to be in that group when it reaches the 9th grade. In other words, take the number currently enrolled, reduce it by the number you expect would drop out, move, etc., and increase it by the number you would expect to move into the area. This can only be a rough guess, whether the student body (i.e., potential group for vocational education) is on the increase or decrease. The mobility and population change information generated previously on the general population will assist you in projecting the increase or decrease in the student body.

Column 4 -

For those grades for which you have student-interest survey or other data, give the number and/or percentage of students, who expect to study in each of the three general areas in high school.

Column 5 -

For those grades for which you have student-interest survey or other data, give the number and/or percentage of students who expect to attain each of the levels of education mentioned.

Column 6 -

Use this column to make any comments to expand on or clarify the data.

ANALYSIS OF CURRENT STUDENT BODY

PA-2

COMMUNITY: ______________________ DATE PREPARED: ______________

Column 1	Column 2	Column 3	Column 4	Column 5					Comments
Grade Level	Current #	# in Grade 9	Expected Area of Study in H.S. College Prep/Vocational/General	Expected Level of Educational Attainment					
				Professional	4yr. coll.	2 yr. coll.	H.S.	Jr.H.	
K									
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

INSTRUCTIONS FOR COMPLETING

PA-3

ANALYSIS OF RECENT GRADUATES

Column 1 -

List the year of each graduating class for which you have follow-up of graduates survey or other information.

Column 2 -

Give the number and percentage of graduates from that year involved in each of the activities listed on the form.

Column 3 -

Use this column to make any comments to expand on or clarify the data.

ANALYSIS OF RECENT GRADUATES

PA-3

COMMUNITY: ____________________ DATE PREPARED: ____________________

Column 1	Column 2						Column 3
Year Graduated	going on to work No. / %	going to 4 yr. college No. / %	going to Post-Secondary Technical School No. / %	seeking work but unemployed No. / %	going into military No. / %	Other (marriage, travel, etc.) No. / %	Comments

RESOURCES ANALYSIS

INTRODUCTION

While previous sections of this handbook analyzed needs in a variety of ways, this section is designed to identify the resources already available to help meet those needs.

Four kinds of resources are documented:

1. Existing physical facilities available to vocational education
2. Professional staff available as teachers, counselors and administrators
3. Federal, state and local financial resources available for vocational programs
4. Human and physical resources available in the community as identified through a community resources survey.

Conducting this analysis not only catalogs the resources already available to you, but will probably identify some resources which otherwise may be overlooked.

This section has the following forms and instructions for resource analysis:

RA - 1: Physical facilities inventory

RA - 2: Professional staff inventory

RA - 3: Financial resources inventory

RA - 4: Community resources inventory

FACILITIES

As part of the analysis of available resources, it is useful to develop a catalogue of physical facilities (buildings and rooms) and equipment which is already available. This information may already have been developed, but may have changed since it was done. If not currently available in one place, then RA-1 should be used as an inventory sheet.

The end result of this analysis should be a complete list of all available rooms, the size of the room, the major equipment in it (typewriters, machines, etc.) and the approximate value of the equipment.

An estimate of the percentage of total physical plant allocated to vocational programs should be noted. Also, an estimate of classroom and shop utilization ought to be calculated. This can be done by determining the percentage of time each classroom or shop is actually being used by students.

INSTRUCTIONS FOR COMPLETING

RA-1

FACILITIES

Column 1 -

List each room currently being used or now available to vocational education. Include rooms away from the main building (e.g., borrowed space in another school). Include the library, cafeteria, study halls, labs, gyms, etc. General classrooms may be combined into one, labeled for example "6 general classrooms."

Column 2 -

For each room or group of rooms in column 1, give the total number of square feet of floor space.

Column 3 -

For each room or groups, list the various items of major or capital equipment. Major equipment may be defined as anything costing over $ 100.00. Examples would be "one turret lathe" or "12 electric typewriters."

Column 4 -

Give the combined estimated dollar value of all major equipment in the room.

Column 5 -

Use this column for any comments to expand on or clarify the data.

FACILITIES

RA - 1

COMMUNITY: ______________________ DATE PREPARED: ______________

Column 1	Column 2	Column 3	Column 4	Column 5
Room	Square Feet	Major Equipment	Estimated Value of Major Equipment	Comments

PERSONNEL

Perhaps the most important part of the analysis of available resources is developing a catalogue of human resources (personnel) involved in vocational education in the local area. Form EPA - 1 in the "Existing Programs Analysis" section gives the numbers of teachers or teacher equivalents involved in each major program area. It is important to augment this data with a cataloging of the people working in vocational education and a description of other experience and skills which they have which might allow them to become involved in different areas of vocational education to meet the ever-changing needs of students.

Many large companies maintain computerized "skills inventories" which help them identify available human resources to solve a particular problem. Nothing so elaborate is needed here, but form RA- 2 can be a valuable device to enable you to see in one place the number of people and range of skills available to you, how long people have been in education, who has industry experience, etc.

As a back-up information to RA - 2 it might be useful to maintain a file of personal resumes for all your professional staff members.

INSTRUCTIONS FOR COMPLETING

RA-2

PERSONNEL

Column 1 -

List the name of each individual employed by the vocational education program.

Column 2 -

Give the area of teaching or adminstrative activity the individual is currently working in. If the individual currently has free time, indicate the amount.

Column 3 -

Give any degrees held by this individual.

Column 4 -

List any experience the individual has in industry or business.

Column 5 -

List any areas the individual is certified to teach in other than the one he or she is currently teaching in.

Column 6 -

Tell how long the individual has been teaching or working in his or her current area of vocational education.

Column 7 -

List any other significant skills possessed by the individual, such as " speaks Spanish " or "can type 40 w.p.m.".

Column 3 -

List any significant training experiences not reflected by the degrees attained. This may be post-graduate work, seminars, workshops, etc.

Column 9 -

Use this column for any comments to expand on or clarify the data.

PERSONNEL

RA-2

COMMUNITY:

DATE PREPARED:

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9
NAME	AREA OF CURRENT WORK	DEGREES	ANY IND. EXP.	OTHER AREA OF CERTIF.	# OF YEARS IN PRESENT AREA OF WORK	OTHER SIGNIF. SKILLS	SIGNIFICANT TRAINING EXPERIENCE	COMMENTS

FINANCIAL RESOURCES

Virtually all aspects of the operation of vocational programs depend upon dollar funding. To the extent that when financial resources are available locally, from State or Federal government, our vocational programs will reflect quality and quantity.

A number of indicators of financial resources and/or level of effort are recognized by school finance commissions or accreditation agencies. The data with respect to these financial characteristics for your district can be obtained either from the local town report or from the annual State report on school finance.

Form RA - 3 provides a format for listing these characteristics (some universal characteristics have already been suggested) for your school district. Insofar as data is available, these financial characteristics ought to be obtained for prior years so that trends can be idendified.

INSTRUCTIONS FOR COMPLETING

RA-3

FINANCIAL RESOURCES

Column 1 -

List the various financial characteristics which are to be considered as evidence of financial resources. A number of recognized financial characteristics have already been suggested.

Column 2 -

Enter the figures which describe the financial characteristics of concern as it was two years ago.

Column 3 -

Enter the figures which describe the financial characteristics of concern as of last year.

Column 4 -

Enter the figures which describe the financial characteristics of concern for the current fiscal year.

Column 5 -

Record comments on trends or unique aspects of your district's financial profile.

FINANCIAL RESOURCES

RA-3

COMMUNITY: ____________________ DATE PREPARED: ____________________

Column 1	Column 2	Column 3	Column 4	Column 5
Financial Characteristics	Two years ago (1977)	Last year (1978)	Current year (1979)	COMMENTS
Per pupil expenditure (not including capital outlay)				
Assessed valuation in the district				
Approximate percent assessed valuation is of true valuation.				
Assessed value per youth in secondary schools.				
Percentage of secondary funds derived from tuiton components of school costs paid by:				
Local				
State				
Federal				
Other				
Ability to pay = $\frac{\text{Assessed valuation}}{\text{A.D.A.}}$				
Total Budget for education				
Tax Rate				
Average daily attendance				
Vocational education budget as paid by				
Local				
State				
Federal				
Other				

COMMUNITY RESOURCES SURVEY

As stated earlier, it is known that the community has unlimited potential. It has buildings, people, money, and materials to offer those who request it. Most important, the community can offer students valuable learning experiences whether these experiences take the form of work, learning, or a combination of both.

Why build an automotive facility at the school for nearly $100,000 plus the staff it will take to maintain it? You have in most communities both garages and dealerships with skilled personnel that could be utilized for little or no cost in most cases. Most people have looked upon this use of community as merely temporary. Another good example is the temporary use of public buildings as classrooms. As educators we ought to lead the way in seeking out the fullest potential of our communities.

As part of the needs assessment process, a community resources survey ought to be completed. This provides the opportunity for the local administrator to directly inform the public of the needs assessment efforts, its purposes and expected outcomes. It also provides the opportunity to assess community interest in vocational education and the availability of community human resources.

A sample community survey is included in this handbook for your consideration. It takes little time to design, yet can yield a myriad of resources, not to mention an improved public image.

In addition to the community resources survey which assesses the availability of voluntary personnel for vocational education, a similar campaign can be undertaken via telephone or a mail survey to assess the availability of places or training materials or even funds.

The human resources identified in the community can be inventoried on a copy of form RA-2, and physical or material resources inventoried on a copy of form RA-1.

INSTRUCTIONS FOR CONDUCTING

A

COMMUNITY RESOURCES SURVEY

TASKS	PROCEDURAL TIPS
1. Design the community resources survey document.	1.1 Keep it short and to the point (see example).
2. Decide mode of delivery.	2.1 Alternative modes: * home via students * mail (bulk) * leave stacks of the survey in public buildings (post offices, banks, etc.) * use form of newspaper advertisement * use radio or TV for a verbal appeal.
3. Present and deliver community survey.	
4. Design and use a more detailed follow-up sheet to obtain in-depth information about the resource (see example)	4.1 This follow-up of respondents can best be accomplished over the telephone.
5. Make a list of resources discerned: * people * places * materials * funds. This list can be used to generate alternative facilities and staffing patterns when your vocational program plan is developed.	

SAMPLE NEWSPAPER AD

WE'RE COMING TO YOU

for help in developing career education and vocational training in our schools. The ABC School District is looking for people of all ages and skills to form:

- advisory committees
- task force groups
- skill training groups
- volunteer groups
- vocational training programs

IN OPEN PARTNERSHIP
WITH THE COMMUNITY,

the ABC School System hopes to bring your skills to our school programs at all levels.

YOU HAVE THE EXPERTISE -
WE NEED YOU!

Career and vocational training are becoming the most active areas of our schools today. If you want to help with your Time, Skills, or Ideas, contact:

George Baker
Vocational Coordinator
ABC Vocational Center
Yourtown, South Carolina

or call (803) 345-6789.

SCHOOL VOLUNTEERS PROGRAM FOLLOW-UP

This form is used to gather additional information from people who respond to the initial community survey questionnaire or newspaper advertisement. A phone call to each of these people to clarify their skills and interests is perhaps the most efficient way to complete your volunteer file.

NAME: ______________________ (Please Print) DATE: ______________

ADDRESS: ____

Phone: ____

Person to reach in emergencies: ______ (name) ______ (address) ______ (phone)

Circle age group: teens 20's 30's 40's 50's 60's or over

Are you a student? __________ School and year ______________

Do you have children in this school district? ______________

name(s), school(s), and grade(s) ______________________

____

Where would you like to volunteer? ______________________

Grades you prefer: 1 to 3___ 4 to 6___ 7 to 8___ High School___

Interested in (check as many as you want):

- ☐ Classroom Assistant
- ☐ Tutoring Reading
- ☐ Tutoring Math
- ☐ Library/Resource Centers
- ☐ Playground Supervision
- ☐ Physical Education
- ☐ Art
- ☐ Music
- ☐ Clerical
- ☐ Special Skill (specify)___
- ☐ Other ______________

Can you volunteer once a week?___ twice a week?___ or more?___

Which days? ____________________ What hours? ______________

Education: Names of schools attended ______________________

____

Experience: (Paid jobs and Volunteer experience)________________________

____

Interests, Skills and Hobbies: (Art, Music, Business, Cooking, etc.)_____

____

Could you present a special program on any subject (musical instrument demonstrations, talks on other countries visited or studied, etc.)?_______

____

Do you have transportation?________________

Would you be willing to provide transportation for someone else?________

PROGRAM PLAN DEVELOPMENT

This handbook has been devoted primarily to the subject of how to conduct a needs assessment at the local level. It shoud be readily obvious that needs assessment is at the heart of the planning process. As stated earlier, a needs assessment that does not result in a plan in nothing more than an academic exercise.

Although it is not the intent of this handbook to provide a complete description of the planning process, this section will give some basic techniques for using all or parts of the needs assessment for planning purposes.

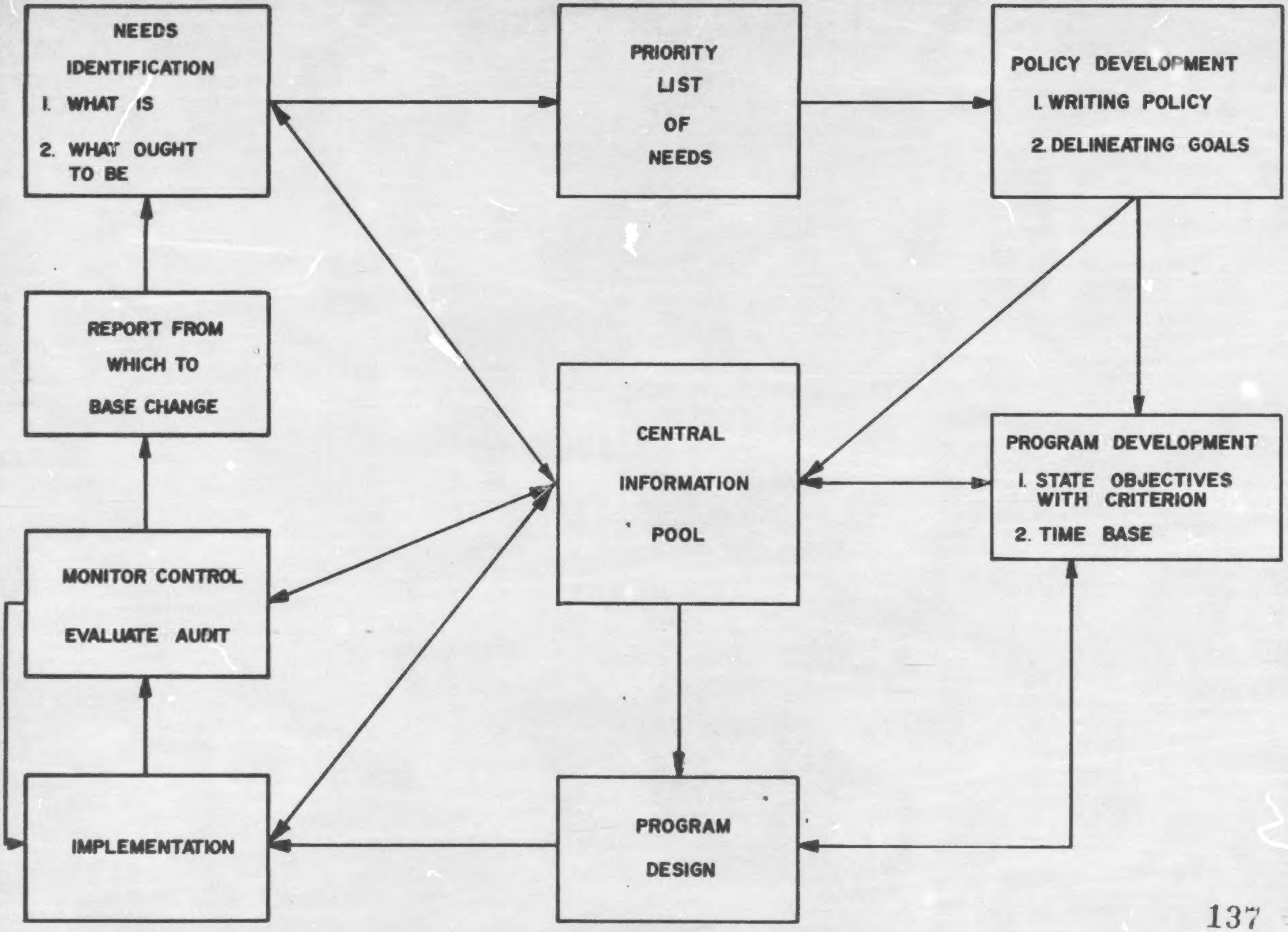
Figure 2 presents a Model for Educational Planning. It begins with the Needs Assessment process which has been described in this handbook and results in a Priority List of Needs to be addressed. Once the needs list has been identified, policies and goals (Policy Development) are developed for each need. Following decisions on which policies to adopt, more detailed objectives and criteria by which to monitor progress are developed (Program Development).

The next step is Program Design followed by Implementation. During implementation, program managers monitor and evaluate progress and make decisions on planned variations which make implementation more effective. Over time, implementation programs are compared to renewed needs identification activities with a view toward identifying and reporting discrepancies. These discrepancies in turn feed into a new list of priority needs for future policy-level decisions.

Central to the entire model for educational planning is the Information Pool. At each step in the cycle, information is fed into the pool and other data are extracted. The information pool is a dynamic, ever-changing reservoir of data upon which to draw for assistance in decision-making.

The literature on educational planning is extensive both for general planning techniques and for specific areas such as facilities, special student needs, vocational and academic programs.

MODEL FOR EDUCATIONAL PLANNING


NEEDS IDENTIFICATION
1. WHAT IS
2. WHAT OUGHT TO BE
PRIORITY LIST OF NEEDS
POLICY DEVELOPMENT
1. WRITING POLICY
2. DELINEATING GOALS
REPORT FROM WHICH TO BASE CHANGE
CENTRAL INFORMATION POOL
PROGRAM DEVELOPMENT
1. STATE OBJECTIVES WITH CRITERION
2. TIME BASE
MONITOR CONTROL
EVALUATE AUDIT
IMPLEMENTATION
PROGRAM DESIGN

DISCREPANCY ANALYSIS

The various types of analysis set forth in this handbook have described "what is" and "what ought to be" in a variety of ways and from a variety of viewpoints. The first part of the planning process, then, is to compare the "what is" with the "what ought to be" by means of a DISCREPANCY ANALYSIS to find out where gaps exist.

Discrepancy analysis requires that two items of information which are related be compared to see if they are in agreement or disagreement with each other. For instance, if job market figures indicate increasing opportunities for those having agri-business skills and a school's enrollments and completions in this area are decreasing - then a discrepancy exists. A number of factors can now be influenced to reduce or eliminate the identified discrepancy. Perhaps enrollments can be increased, CO-OP stations identified, additional staff hired, or a combination of these.

Many discrepancies usually can be identified in every educational program. Some of these will show wide gaps between "what is" and "what ought to be", others will be quite minor. Some gaps can be closed with internal reallocations of resources. Others will require new funding, additional personnel, and perhaps even facilities. The objective of the Discrepancy Analysis section is to identify as many program discrepancies as possible and the corresponding resources required to close these gaps. Once the gaps have been identified, they can be prioritized. This is necessary because resources are always limited and it is impossible to close all the gaps, at least on a short-range basis. But it is possible to develop a plan to close those gaps which are most important and can be most realistically tackled. A program plan will state objectives in terms of the resources needed and outcomes expected to close the gaps.

Attached is a form, PPD-1, designed to aid you in identifying and prioritizing discrepancies. It also provides the format for the identification of resources required to address the problem. The "comments" column, in particular, might contain the essential points of information needed to state a formal program objective when the local plan of action is developed.

Form PPD-1 is deceptively simple-looking. Actually it takes a great deal of effort to bring together the information generated in the various analysis sections, sort it out, and judge its importance. But the payoff in improved decision-making and program plan development will be well worth the effort.

Once PPD-1 has been done as thoroughly as possible, then a program plan can be developed. Program Planning is something with which local directors are familiar (annual local plan) and expanded efforts in the areas of program planning and budgeting will be undertaken in the future. The local director can use the information generated on PPD-1 to decide which programs he wants to undertake, can develop a program budget, and can design an implementation plan using the Plan of Action Chart found in the section "DESIGNING THE STUDY" (pg 19).

INSTRUCTIONS FOR COMPLETING

PPD-1

DISCREPANCY ANALYSIS

Columns 1 and 2 -

List in these two columns the items of information being compared to identify discrepancies. These items will usually be facts and figures generated in the four analysis sections, but may consist of your summary of a particular item. Set forth below are some suggested items for discrepancy analysis.

Column 3 -

Indicate the degree of discrepancy between "what is" and "what ought to be". Is it "great" "moderate" or "slight"?

Column 4 -

Estimate, even if very roughly, the cost of correcting the deficiency. Part of the cost could come from Column 6 or 7 if new personnel of facilities will be needed.

Column 5 -

List any funding available or potentially available from outside sources, or indicate that it would represent a budget increase.

Column 6 -

State what the effect will be on existing personnel, or what types of new personnel will be needed.

Column 7 -

State what the impact will be on existing facilities what type of new facilities will be needed and what community resources might be available.

Column 8 -

State the degree to which te community is likely to accept a program to close the gap. Don't forget political considerations, student interests, etc.

Column 9 -

Use this column to make any comments, to expand on, or clarify the data. The column may also be used to give a priority weighting to the importance of solving the discrepancy.

DISCREPANCY ANALYSIS

PPD-1

COMMUNITY: ____________________

DATE PREPARED: ____________________

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9
ITEM 1	ITEM 2	DEGREE OF DISCREPANCY	ADD'L. COSTS	FUNDING AVBL.	PERSONNEL	FACILITIES	PROGRAM ACCEPTABILITY	COMMENTS

EXAMPLES OF DISCREPANCY AREAS

ITEM 1	WHERE FOUND	VS.	ITEM 2	WHERE FOUND	PURPOSE
A. List the South Carolina and national job market trend statements for each program you have.	Job Market Analysis forms JMA-1 - 4		A. Vocational Education Completions Trends Statements	Existing Programs Analysis form EPA-1	Find any program areas where the job trend is up and the completions trend is down, or vice versa.
B. List the local job market trends for each program.	Job Market Analysis form JMA-5		B. Vocational Education Completions Trends Statements	Existing Programs Analysis form EPA-1	Find any program areas where the local job market trend is up and the completions trend is down or vice versa.
C. List the programs students are interested in taking.	Existing Programs Analysis, Student Interest Survey.		C. List the programs you now offer.	Available	Find any programs you offer where student interest is very high or very low.
D. List for each program the degree of success graduates have had getting jobs.	Existing Programs Analysis, Graduate Follow-up Survey.		D. List the current enrollments and trends in that program.	Existing Programs Analysis form EPA-1	Find any program area where graduates are having a hard time getting jobs, but completions trends are up, or graduates get jobs easily but completions trends are down.
E. List the name and number and population trend of population sub-groups such as: total, disadvantaged, handicapped minority.	Population Analysis form PA-1.		E. List the number of completions and completions trends for that sub-group.	Existing Programs Analysis form EPA-1.	Find any group with a big gap between the % it represents of population in the area and % of enrollments and completions trends it represents.

EXAMPLES OF DISCREPANCY AREAS

ITEM 1	WHERE FOUND	VS.	ITEM 2	WHERE FOUND	PURPOSE
F. Give the anticipated enrollments in voc. education 5 and 8 years from now.	Population Analysis form PA-2, tempered by your judgement of other factors.		F. State the impact on available personnel, facilities, budget.	Resources Analysis forms RA-1 - 4	If enrollments trends will be greatly up or down, what will be the impact on resources.
G. State the % and trend of graduates who sought work but would not get it.	Population Analysis form PA-3.		G. Determine the % and trend of enrollments in vocational education.	Existing Programs Analysis form EPA-1.	If the trend of total high school graduates looking for work but unable to find it is up, is trend in vocational enrollments up too?
H. List the new programs needed which are not now offered.	Job Market Analysis form JMA-1 - 5; Population Analysis form PA-2.		H. State the impact on personnel, facilities, budget.	Resources Analysis forms RA-1 - 4	If you will need to change the list of programs offered, what is impact on resources?

USING DATA EFFECTIVELY

The purpose of this chapter of the handbook is to help you to describe, interpret, and present data, ideas, and concepts more simply and effectively as you develop your needs assessment for vocational programs.

The body of this handbook has presented methods for collecting needs assessment data from the various areas for which needs analysis should be made, so that effective program planning and development can take place. Once you have utilized any or all of the techniques described, you will have a great quantity of information in a variety of formats. In working with your advisory committee, school board, or the general public, you will usually not be able to present the totality of your "raw" data and expect that it will be either read or understood. Once you have the data, you must determine the best, most simple methods for communicating it and the most effective means of displaying this data attractively so that your results are clear to the desired audience.

When selecting statistical techniques and displaying methodologies, the intended audience of the report should be a primary consideration. The level of sophistication is determined by the audience's level of involvement in education. However, for your purposes, the most simple statistical techniques coupled with the most graphic display method is your best bet for keeping the communication gap to a minimum.

When compiling the body of a report in which sets of data are to be presented, utilize, to as great a degree as possible, only summarized statistical expressions (mean scores, median age, average income). If it is necessary, because of the possible audience skepticism, to include quantities of highly specific or even raw data in the report, include them in an appendix so that the average reader does not have to wade through them. When utilizing statistical expressions which indicate central tendency or spread, such as standard deviation, try to illustrate the findings graphically so that no misunderstandings take place. Even the most experienced educational administrator forgets what standard deviation means after a few years on the firing line; so frequency charts, figure graph graphs, etc., can often best communicate a statistic that you feel is important.

You obviously cannot have illustrations or utilize statistics for every set of data that you pick up. You should select those sets of data that are of importance and utilize appropriate methodologies to summarize them.

The authors realize that often needs assessment data are a mandatory part of hum-drum reporting requirements of either federal, state, or local agencies and that annual reports and plans are supplemented with tables and statistics lifted bodily from other reports. However, your reports are becoming increasingly important to the success of your program in the search for the scarce resources available to education. It therefore behooves you to take some time in selecting your statistics and designing your displays.

All of us have had exposure to the more common statistical expressions either in our undergraduate or graduate programs, and we usually mastered them sufficiently to pass the course. However, without day to day use, we get rusty. It seems worthwhile that we review some of the terminology and cite some examples where each might be used in making your reports.

Statistics are usually divided into two types: Descriptive and Inferential. Descriptive statistics are those measures which allow you to summarize your findings about a set of data. They fall into two types:

1. Measures of Central Tendency
    - Mean
    - Median
    - Mode
2. Measures of Variability
    - Range
    - Standard deviation

Inferential statistics are those expressions that are useful to make predictions based on descriptive data. In this area, we will talk about variables, sampling procedures, probability and levels of significance.

DESCRIPTIVE STATISTICS

Measures of Central Tendency

The Mean. The mean is the most commonly used measure of central tendency. It is what we usually call the average. It is computed by adding all raw scores of a given dimension and dividing this sum by the number of scores added. For example, in the existing programs analysis section you are asked to list enrollments and completions for the last three years. When comparing this data in your report it may be easier to cite the average of each category and express the percentage of completions to enrollments based on this average.

In the population analysis section, characteristics such as educational level, income level, and age are often most easily communicated by citing the mean for the area and comparing this mean to state or national averages. As the most commonly used statistical expression, the mean can be used in many other contexts based on your own needs and reporting requirements.

The Median. The median is simply the midpoint in a set of ranked scores. It can be, but is not necessarily, one of the scores. It is more accurately a point that divides the scores into two equal halves. When dealing with an odd numbered set of scores, it is determined by counting up the ranking to the one that falls in the middle.

$$8,\ 9,\ 11,\ \underset{M}{\underline{12}},\ 13,\ 13,\ 14$$

When dealing with an even numbered set such as

$$5,\ 6,\ 7,\ 9,^{V}11,\ 12,\ 12,\ 14$$

it is the mid-point between the two middle scores, or in this case, 10.

While the mean is used more often, the median may be more appropriate when a few extreme scores adversely affect the mean. For example: If you wanted to express the average cost per square foot in an equipped vocational facility and found that ten of the areas cost between $45.00 and $50.00 and two of the areas cost $100.00 per square foot, the mean cost per area would be $56.25, while the median cost would be $47.00. As follows:

Area 1	$45.00	
2	45.00	
3	46.00	
4	46.00	
5	46.00	
6	47.00	— $47.00 - Median
7	47.00	
8	48.00	
9	48.00	
10	50.00	
11	100.00	
12	100.00	
TOTAL	$\frac{668.00}{12}$	= $55.67 Mean

In this case, the central cost of a shop area is more accurately $47.00 than it is $55.67. Because of the effect of the two very expensive shops, the mean is inflated. If you express the average cost as being $55.67 you are using a number that is $5.67 higher than the cost of 10 of the 12 shops.

This may or may not be a practical example for you. However, it should illustrate how a few bits of data that fall at an extreme can affect the mean score and render the median a more suitable summary expression.

The Mode. The least commonly used expression of central tendency is called the mode. It is simply the most frequently occurring score in a distribution. Using the data in the median example, the mode would be $46.00 as it is the only item whose frequency is three (frequency being the number of times a number occurs in a distribution of data). For your purposes, the mode should only be used when a quick estimate of central tendency is necessary.

Measures of Variability

Expressing the central tendency of a set of data gives only a partial picture. In order to communicate a more complete picture of that set, some description of how the scores, income, etc., are spread within the set is helpful. Before we can discuss the common expressions of data spread or variability, however, we should first review the concepts of normal distribution, of the normal curve.

What statisticians call the normal distribution is a spread of data on both sides (above and below) the mean that is the same. In an ideal case of the normal curve, the mean, the median, and the mode are the same number. This occurs because the score that occurs most frequently (the mode) divides the spread of scores into two halves (the median) and the deviation and frequency of scores on both sides of this number are identical causing it to be the arithmetic mean. This type of perfect curve seldom, if ever, really occurs but an understanding of it will help you to describe the variability of your own data. When something close to a normal curve does occur, relatively large quantities of data are often required. The blocked out bar graph below is an illustration of a perfectly normal curve representing 18 hypothetical test scores.

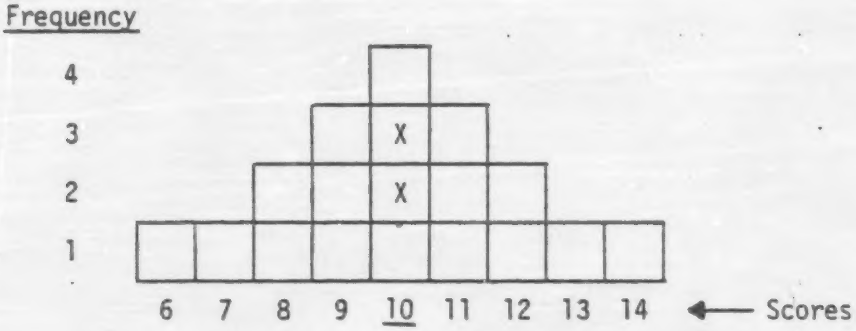


FIGURE 1

This block graph shows that the mode is 10 as it is the only score that occurred as often as four times. It is also the median as the ninth and tenth scores in the distribution are both 10, and it is the mean which can be computed arithmetically or can be observed because of the regularity of score frequencies and deviations on both sides of it.

This concept is usually illustrated by the means of a bell shaped curve.

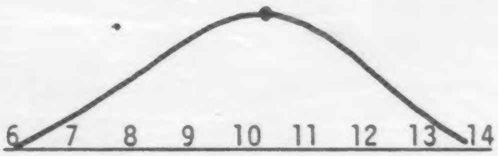
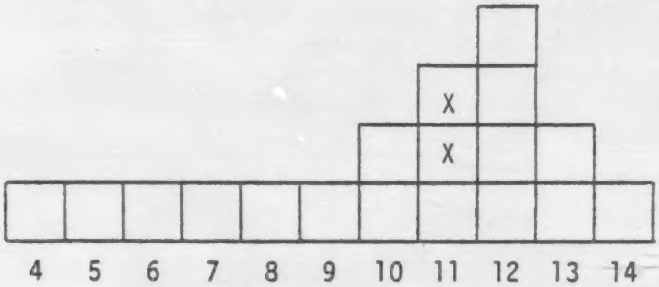


FIGURE 2

When describing your data, you should express the resemblance of the distribution to this curve.

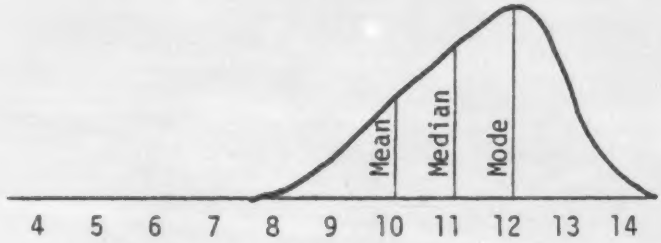
Since in most cases you will be picking up fairly small samples of data, your distributions will tend to be other than normal. Curves that are weighted more heavily either above or below the mean are known as skewed curves. In expressing a skew, it is simplest to state that in a given sample a greater number scored above the mean than below it. This statement indicates a distribution like this:

FIGURE 3



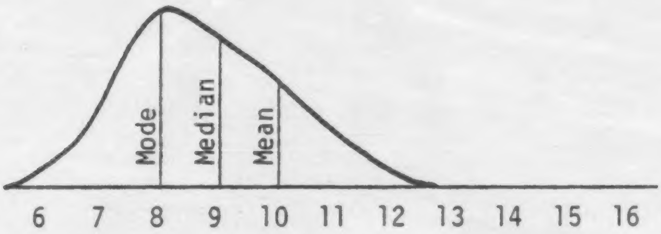
The mean is still 10, but now the median is 11 and the mode is 12. The curve for this distribution would look like this:

FIGURE 4



Correspondingly, if the curve looks like this:

FIGURE 5



a greater number scored below the mean. You can also express these distributions by stating that the curve is skewed to the left or right of the mean as the case may be.

You can now express the central tendency of your data and the direction of the distribution as compared to a normal distribution. Statements about the three examples can be made such as: (Figure 1) A class of eighteen students took Test XYZ and achieved a mean of ten with the remaining scores in a normal distribution; (Figure 2) A class of eighteen students took Test XYZ and achieved a mean score of ten with a greater number scoring above the mean than below; (Figure 3) The converse of statement two.

The next step is to describe the degree of variability of the scores.

The Range. The simplest expression of variability is the range. This is merely the difference between the highest and lowest scores in a sample. Using the scores in Figure 1, the highest score is 14 and the lowest is 6, meaning that the range in this case is 8. If we know that the mean score is 10, the curve is normal, and the range is 8, we should have a general understanding of the results of the testing.

The Standard Deviation. The standard deviation is the most common index of variability. The standard deviation is always figured using the mean and, like the mean, is an average. It is an average of the distance of individual scores from the mean. While the range describes the distribution of scores by giving the distance between the extremes, the standard deviation describes the distribution by indicating the average deviation from the mean.

You can find the standard deviation for a set of scores by computing the square root of the sum of the deviations from the mean squared divided by the number of scores, or:

$$S = \sqrt{\frac{\sum x^2}{N}}$$

where x = a deviation from the mean ($X-\overline{X}$) and N = size of the sample.

Using the distribution of scores in Figure 1, it is computed as follows:

Scores	Deviation	Deviations^2
14	+4	16
13	+3	9
12	+2	4
12	+2	4
11	+1	1
11	+1	1
11	+1	1
10	0	0
10	0	0
10	0	0
10	0	0
9	-1	1
9	-1	1
9	-1	1
8	-2	4
8	-2	4
7	-3	9
6	-4	16
		72

Mean = 10 N = 18

$$S = \sqrt{\frac{72}{18}}$$

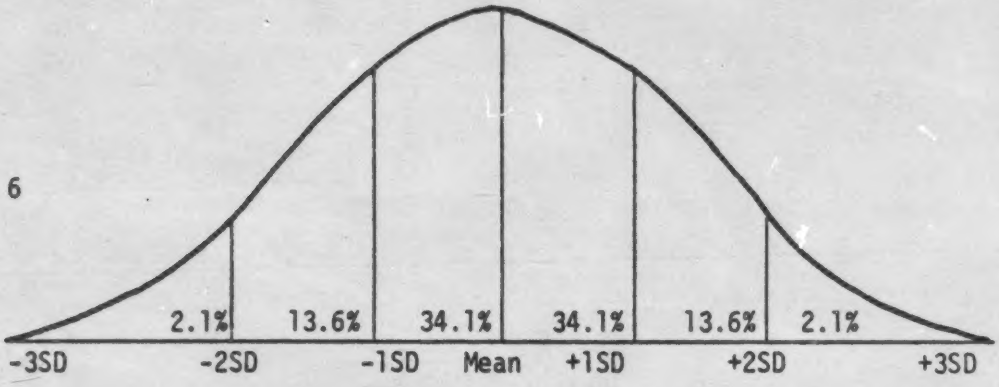
$$S = \sqrt{4}$$

$$S = 2$$

So the average deviation from the mean of 10 is 2.

A check of the deviations from the mean indicates that this is a normal distribution. In the case of normal and near normal distribution, the standard deviations can be used to divide the scores into units for which certain proportions exist.

FIGURE 6



This illustrates the proportions of the scores into which the standard deviation units divide the distribution in a normal curve.

If we know that a curve is roughly normal and we know the mean and standard deviations, then we know where approximately 68% of the data fails.

When distributions are skewed, these proportions do not remain equal on both sides of the mean; however, +1S to -1S still remains 68%.

Summary

Using the best (for you) measure of central tendency and the more appropriate measure of variability, you should now be able to summarize the description of a set of data according to the population with which you are communicating.

Here are three examples of descriptions that vary in technical level, but communicate roughly the same concept using our original distribution from Figure 1.

Example One

Eighteen students taking Test XYZ averaged a score of 10 with a high score of 14 and a low score of 6.

Example Two

A sample of eighteen students achieved a mean score of 10 with a range of 8 on Test XYZ.

Example Three

A sample of eighteen students achieved a mean score of 10 with a normal distribution and a standard deviation of approximately 2.

All three statements summarize the data in Figure 1, and similar statements can be used to summarize like sets of data within your own needs assessment reports.

INFERENTIAL STATISTICS

We have talked about methods of describing data. However, what we often want to do once we have collected a set of data is draw some conclusions or make some predictions about data that we are unable to collect, either because the amount would be too vast or the data will not be available until some future time.

Predicting the test scores of whole school enrollment based on the performance of a class, or predicting the scores of a future class based on those of a present class are two examples of the use of inferential statistics. Generally what inferential statistics do is tell how much confidence you can place in your descriptive data as a predictor of the behavior of other groups.

Certain concepts must be understood in order to make use of inferential statistics. The first is that of the educational variable. A variable is a characteristic which differs among individuals. Humanness may be a characteristic of people; however, it is not a variable as all people are human. Height, weight, age, color, etc., are all human variables as they differ from person to person.

There are two types of variables: quantitative and qualitative. Quantitative variables are those to which a number can be attached to express amount, degree, or frequency. Qualitative variables are those for which individuals differ in kind or sort and therefore possess no inherent numerical ordering system. An example of a qualitative variable is: Major in college in which the categories are history, English, mathematics, etc. This variable has no intrinsic order and any order imposed on it would be completely arbitrary.

When trying to make inferences from one population to another based on a set of data, you must determine the variables within each population that might affect its behavior and correspondingly affect differences in the data.

This brings us to a discussion of populations and sampling procedures.

You may want to do a student survey of the type in the existing programs analysis section but find that the length of it coupled with your inability to get to the total population in the school makes a complete survey impossible. If you determine the major variables that affect choice you can select a sample population which will be representative of the total population. Consequently, if you were to survey 100 students out of a population of 1000, you would try to maintain the same ratio as in the total population on such variables as:

1. Sex
2. Intelligence and achievement level
3. Race
4. Socio-Economic level
5. Grade level
6. Any other variable which might be prevalent in your school

The easiest way to select your 100 students may be to select every tenth student on the school register, thereby achieving a random sample which theoretically would be representative of the school population.

The more representative your sample, the more stock you can place in the results of your survey.

There are times when you have data from a non-controlled sample. In that case, you should determine the characteristics of the sample which may have affected the data and determine how similar these characteristics are to the predicted population. Obviously the greater the discrepancy in variables, the less you will be able to make valid inferences about the two populations.

When comparing groups of data in order to make inferences about them, our purpose is to state how the two groups are the same or how they differ. When we do this, we will compare two numbers measuring the same dimension and we will want to make a statement that says that there is a considerable difference in intelligence between Group A and the general population (Group B). To make this statement, techniques that measure the statistical significance of the difference must be applied. What significance methods do is tell you the odds on whether the results which you achieved could have occurred by chance. Now obviously any set of results could occur merely by chance; however, with a given number of cases some sets of numbers are less apt to occur by chance than others. Therefore, expressions of significance levels merely tell you how often a given set of numbers would just happen. The two common expressions that are cited are a signicance at or above the .01 level ($\geqq .01$) or at or above the .05 level ($\geqq .05$). The first means that there is only 1 chance in 100 that the difference you have identified occurred by chance alone. Conversely, at the .05 level, you are saying that the odds are 20 to 1 that there is a real difference in the samples on this variable. When your statistical tests fall at or above either of these levels, it is labeled as statistically significant. Remember, significance testing tells you nothing about the trust or validity of your statements, as you must derive your conclusions correctly from validly collected data. It only tells you that the differences you have come up with do or do not occur often by chance.

Trend Analysis

While we felt it important to review the above inferential statistics so that you can use them where they are suitable in your needs assessment, we find that much of the data you will be collecting will not lend itself to this type of measures. However, you will still be called on to draw inferences, conclusions, and make decisions based on this other needs assessment data. In assessing the needs in all sections of the manual, you are asked to report figures for a span of years for employment, enrollment, completions, staff costs, etc. From this data you are to make recommendations for expanding, or contracting, existing programs, or eliminating some and instituting others. To do this, the most effective technique is called trend analysis. In trend analysis, we try to make predictions of future needs based on the size of changes in data on a given variable over certain intervals of time. In the existing programs section, you are asked to cite enrollments by program for the past three years. You might have cited figures such as this:

	1972-73		1973-74		1974-75
Auto Mechanics	25		30		35
No. Change		5		5	
% Change		20%		16.7%	

Using strictly trend analysis by interval, it is obvious that you would predict that enrollment would reach 40 in 1975-76. However, looking at the percentage of increase each year, we can see that while the numbers are increasing the same, the percentage of increase is decreasing.

There are two types of formulas to compute trends: weighted and non-weighted. The one used above was the non-weighted. Basically, what is done is to compute the difference between each time interval for which you have data and divide the sum of these by the number of intervals. Example: The population statistics for a given community for the past four census reports may have been:

	1940		1950		1960		1970
	650		723		966		1361
No. Change		+73		+243		+395	
% Change		11%		34%		41%	

Using the unweighted formula,

73
243
295
3 | 711 - Sum of Difference
237 - Average Difference

we compute the average difference between intervals and add this difference to the latest figure 1361 + 237 = 1598, giving us a prediction that the population of this town in 1980 will be 1598. If we notice, however, that the rate of increase is increasing, we would predict a much higher population level, perhaps in the neighborhood of 2000.

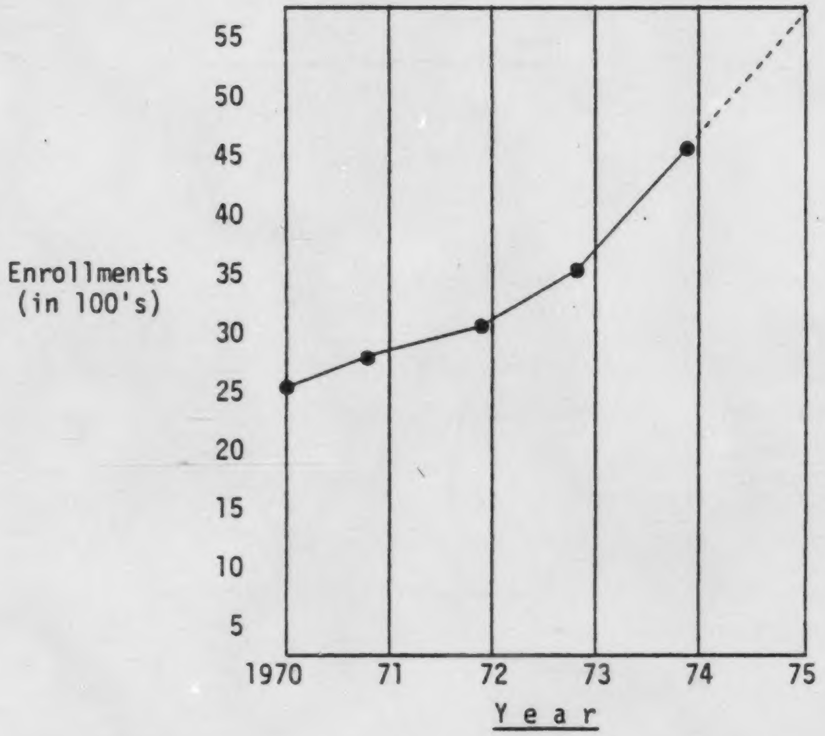
Of course, this last statement is the limitation we must place on trend analysis by formula. Environmental factors at times can affect the trend to a much greater degree than the formula will predict. These variables, however, are often known to you and can be used to alter your prediction. An example may be a community where a military base may have formed a percentage of the population and this base may have closed during the time since the last census. Based on this information, you would adjust your average to reflect the population loss.

Another problem with the use of the non-weighted formula is that it gives equal value to each interval. Yet while distant intervals may still retain some predictive value, the more recent data may be far more representative indicators of the trend in question. In trending other kinds of data, you may find other reasons why certain intervals may be more important than others with the latest intervals usually being the most important. To balance your results so they are more sensitive to the more recent changes, you can use a weighted formula. To do this, you must arbitrarily decide the relative weight to be assigned. For instance, when values for five succeeding years are given and you would like to predict the value at the sixth year, you may assign a weight of an additional .1 for each succeeding interval.

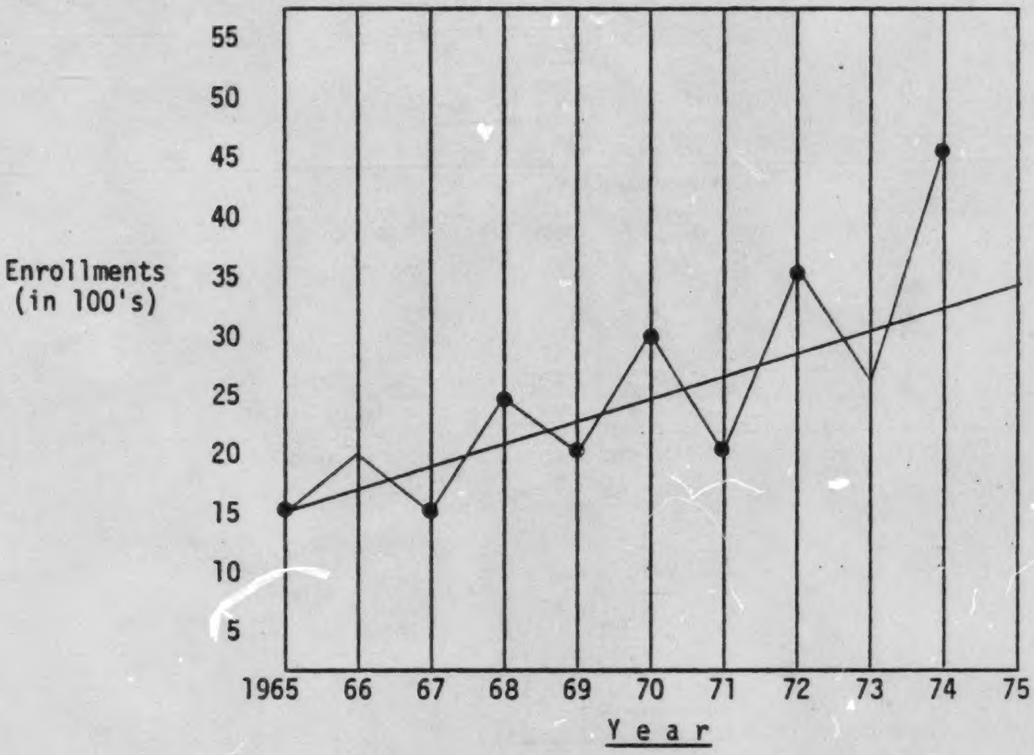
	1970		1971		1972		1973		1974	
Enrollment	25		27		31		37		46	
Difference		2		4		6		9		$= \frac{21}{4} = 5.25$
Weight		1.0		1.1		1.2		1.3		
Total		2.0		4.4		7.2		11.7		$= \frac{25.3}{4} = 6.3$

The average growth rate given on the line labeled "difference" gives equal weight to each year's data. The average given on the line labeled "total" gives more weight, i.e. more predictability to the latest growth interval, yielding in this instance a higher, more representative, growth projection. In effect, this last formula predicts an enrollment of 52.3 students for 1974, rather than 51.25. The difference being that the larger changes in the past two years are given more weight in the average without giving undue weight to the high rate of 9 between 1973 and 1974.

Probably the best way to analyze a trend is to put it in a graph form. Using the numbers in the last example,



This format tends to be a less conservative method of projecting a trend, while the average and weighted average methodology are more conservative in their projection. Of course since the dotted line tends to be arbitrary, you can be as conservative as you want. When plotting an irregular saw tooth pattern, run your trend line through the center of the data as follows:



Plotting trends in this manner may not be as statistically sound as the more sophisticated techniques utilized by statisticians with their computers, but they will usually suffice for the purposes of your needs analysis.

Graphic Presentation of Data

The manner in which you display your findings is critical to effective communication. Dull, poorly labeled tables of endless numbers will not put across your findings to most audiences. Other methods must be utilized to create interest, and to communicate your point. While most of us tend not to be artistic, there are some simple things that can be done to creatively illustrate data. Also, most schools have graphic arts and/or drafting programs which can be utilized in the making of attractive charts, graphs, and tables. It might not be a bad idea to also get the art department involved in this process.

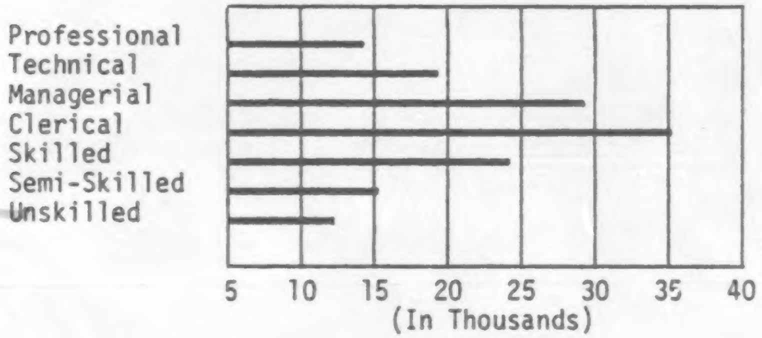
A few rules can be stated for all graphic techniques:

1. Keep them as simple as possible.
2. Label all aspects clearly.
3. Title them correctly.
4. Provide a key or legend when necessary.
5. Select the visual techniques that best illustrate your data.

Bar Graphs and Histograms

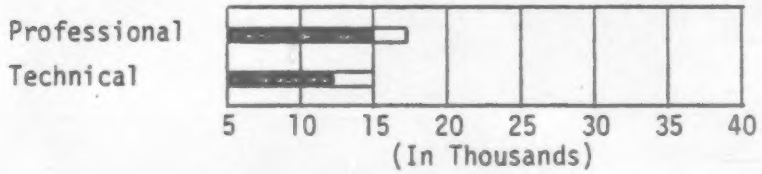
The bar graph is a means of showing a comparison of different quantities. The length of the bars are usually calibrated along the horizontal side of the graph with each being labeled on the vertical side. As an example:

Demand by Major Occupational Groups, 1985



This bar graph gives a visual comparison of the projected demand in Major Occupational Categories in 1985. However, any comparisons of this type can be illustrated through the use of a bar graph. When comparing growth in categories over a given period, each bar can be segmented to show the growth between the given years. For example:

Number of Employed by Major Occupational Grouping, 1975 and Projected, 1985

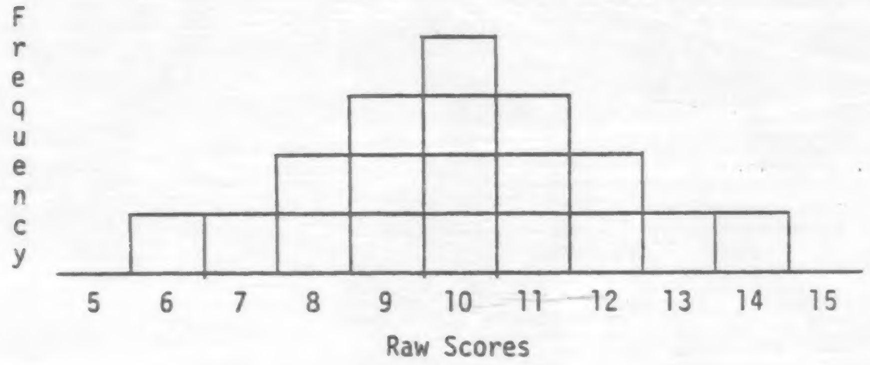


This type of bar graph not only gives a comparison of the quantities in the categories, but of the growth rate of each.

A histogram is a bar graph which illustrates frequency distribution.

Example:

Frequency Distribution of Scores on Test XYZ

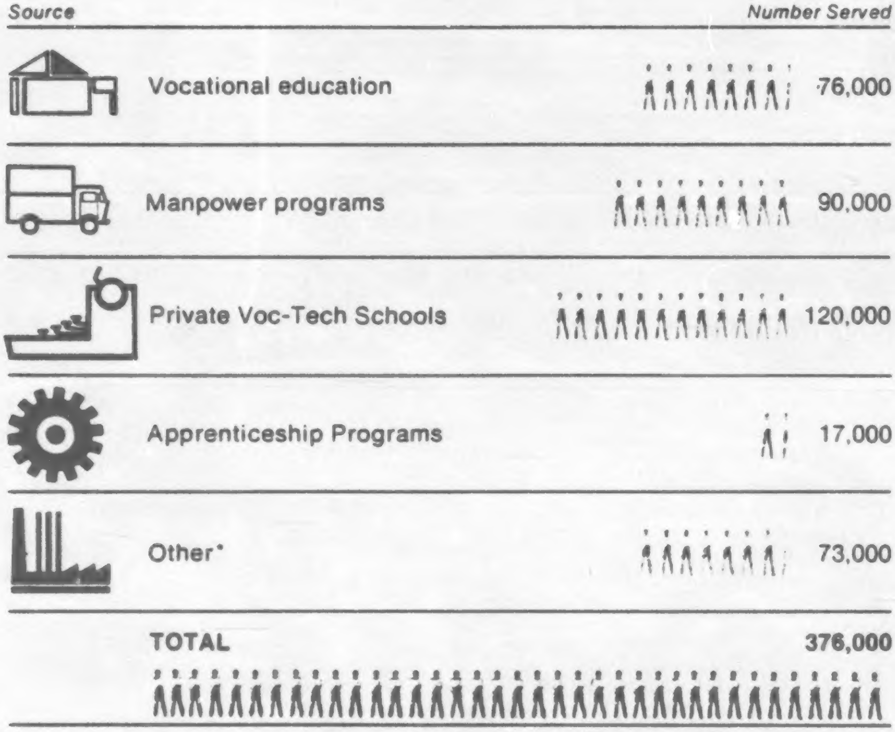


Using the scores from an example used earlier in the chapter, we have charted the number of students who achieved the various raw scores.

Pictograph

The pictograph is another means of graphically presenting comparisons. While it is often more eye-catching than the bar graph, it is not as precise and also demands that a key explaining the symbols be included. In a pictograph, the symbols used to designate the units expressed are usually a picture of the article being illustrated. This is one graphic technique where your Art Department can come in handy.

Example:

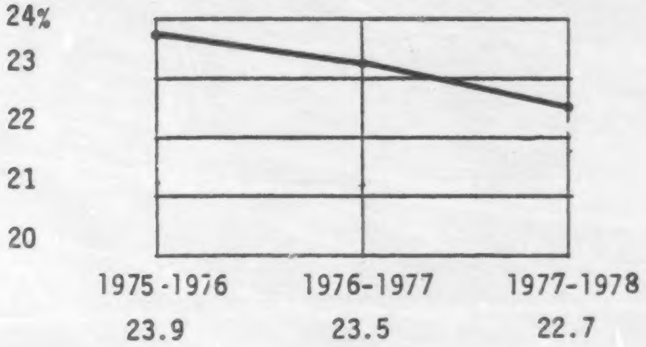


*An estimated 73,000 individuals were involved in training programs in private employment or armed forces situations. There were no accurate figures given for these categories – based on information from the Veterans' Administration and Department of Labor, Apprenticeship Division.

The Line Graph

While bar graphs and pictographs are used to compare several different things, trends and changes in data may be presented by a line graph. In a line graph, points are graphed on a grid drawn on a horizontal and vertical axis. The points are then connected to illustrate the trend or change. As in the case of all graphics, make sure everything is labeled.

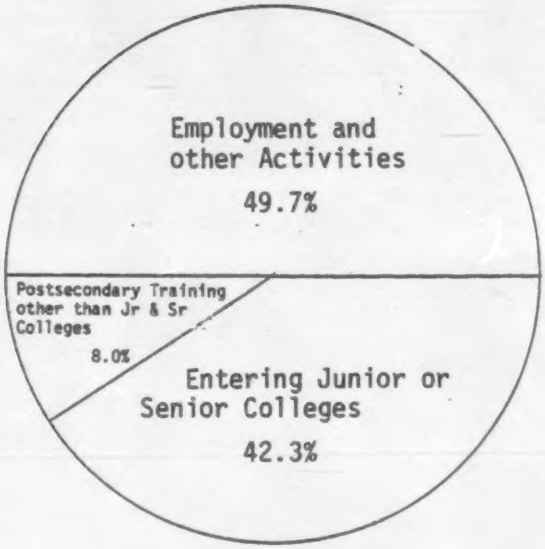
Percent of Population Enrolled in
Public Schools in S. C. 1975-1978



The Circle Graph

The circle graph is a means of comparing the relationship of one part with any other part or with the whole entity or category. While the portions may sometimes be present in units, it is more common to express the wedges of the pie as percentages.

Percentage of Graduates by Type of Activity, 1977



Tables

As stated earlier, you should avoid inserting lengthy tables into the body of your reports. However, some data you may wish to show in tables rather than graphic form. Title each table correctly and make sure the column and row labels are clear. Give whatever directions are necessary for understanding the data.

NUMBER OF 1977 GRADUATES ENTERING POSTSECONDARY
TRAINING OR EMPLOYMENT BY DISTRICT

Area School District	Number of Graduates	Number Entering Jr & Sr Colleges	Number Entering Postsecondary Schools other than Jr & Sr Colleges	Number Entering Employment & Other Activities
Abbeville	251	100	36	115
Charleston	2,648	1,341	241	1,102
Darlington	727	339	33	355
Greenville	3,157	1,403	387	1,367
Newberry	363	153	26	184
Union	370	158	23	189

Source: Rankings of the Counties and School Districts of S. C. 1977-78.

We hope that this section has been of help to you in reviewing statistical techniques and graphic presentation of data, and hope that you will put it to use on your next needs assessment, area plan, or annual report.

DEFINITIONS

Arithmetic Mean - A kind of average usually referred to as the mean. It is obtained by dividing the sum of a set of scores by their number.

Average - A general term applied to the various measures of central tendency. The three most widely used averages are the arithmetic mean (mean), the median, and the mode. When the term "average" is used without designation as to type, the most likely assumption is that it is the mean.

Central Tendency - A measure of central tendency provides a single most typical score as representative of a group of scores; the "trend" of a group of measures as indicated by some type of average, usually the mean or the median.

Distribution (frequency distribution) - A tabulation of the scores (or other attributes) of a group of individuals to show the number (frequency) of each score, or of those within the range of each interval.

Median - The middle score in a distribution or set of ranked scores; the point (score) that divides the group into two equal parts; the 50th percentile. Half of the scores are below the median and half above it, except when the median itself is one of the obtained scores.

Mode - The score or value that occurs most frequently in a distribution.

Random Sample - A sample of the members of some total population drawn in such a way that every member of the population has an equal chance of being included; that is, in a way that precludes the operation of bias or "selection." The purpose in using a sample free of bias is, of course, the requirement that the cases used be representative of the total.

Range - For some specified group, the differences between the highest and the lowest obtained score on a test; thus a very rough measure of spread or variability, since it is based upon only two extreme scores. Range is also used in reference to the possible spread of measurement a test provides, which in most instances is the number of items in the test.

Representative Sample - A sample that corresponds to or matches the population of which it is a sample with respect to characteristics important for the purposes under investigation. In an achievement test norm sample, such significant aspects might be the proportion of cases of each sex, from various types of schools, different geographical areas, the several socioeconomic levels, etc.

Skewed Distribution - A distribution that departs from symmetry or balance around the mean, i.e., from normality. Scores pile up at one end and trail off at the other.

Standard Deviation (S.D.) - A measure of the variability or dispersion of a distribution of scores. The more the scores cluster around the mean, the smaller the standard deviation. For a normal distribution, approximately two-thirds (68.3 percent) of the scores are within the range from one S.D. below the mean to one S.D. above the mean.

Variability - The spread or dispersion of test scores, best indicated by their standard deviation.

REFERENCES

Ahmann, J. Stanley. Needs Assessment for Program Planning in Vocational Education. National Center for Research in Vocational Education, The Ohio State University, 1979 (Information Series No. 154).

Busha, Charles H. The Conduct of Needs Assessments Among Employers, Employer Needs Assessment Project, 1978-1979. Tri-County Technical College, Pendleton, South Carolina.

Coffing, Richart T. and T. E. Hutchinson. Needs Analysis Methodology: A Prescriptive Set of Rules and Procedures for Identifying, Defining, and Measuring Needs. ED 095 654.

Employment Projections for South Carolina's Ten Planning Districts, 1974-1985 by Occupation and Industry. (Current Edition) South Carolina Employment Security Commission, Columbia, South Carolina.

Guifford, J. P. and Benjamine Fruchter. Fundamental Statistics in Psychology and Education. McGraw-Hill, 1978 (Sixth Edition).

Radig, John E. Community Education Needs/Resource Assessment Guidebook. Pitman, N. J.: Educational Improvement Center, 1974.

Rankings of the Counties and School Districts of South Carolina. (Current Edition). South Carolina State Department of Education, Office of Research, Division of Administration and Planning.

Severance, Melvin and R. A. Gustafson. New Hampshire Needs Assessment Handbook for Vocational Education Planning. New Hampshire State Department of Education, Division of Vocational-Technical Education, 1973.

South Carolina Statistical Abstract (Current Edition). Division of Research and Statistical Services, Columbia, South Carolina.

South Carolina Employment Projections 1974-1985 by Occupation and Industry. (Current Edition). South Carolina Employment Security Commission, Columbia, South Carolina.